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Educational News and Editorial Comment

THE UNIVERSITY OF CHICAGO DINNER

At the University of Chicago Dinner to be held in Washington, D.C., on Wednesday, February 24, H. G. Moulton, of the Institute of Economics, Washington, a graduate of the University of Chicago and a former member of the faculty, will speak on the international relations of the United States, with regard to which the Institute of Economics has made special investigations. There will also be addresses by W. W. Charters and George S. Counts, new members of the Department of Education of the University of Chicago. Tickets for the dinner, which will be held at 6:00 P.M. at Rauscher's Restaurant, may be secured from William S. Gray, University of Chicago, for $3.00 each.

EDUCATION AS A STATE FUNCTION

The Supreme Court of Wisconsin recently handed down a decision in an important case in which the board of education and the city council of Milwaukee were involved. The city council contended that it had authority to limit the amount of money that the board of education could secure under the law for the maintenance of school buildings. The board of education contended that education is a state function and not subject to municipal control. The

pronouncements of the supreme court in this case are of great significance to school people.

The court expressed its opinion in unusually clear and emphatic terms. The full text of the decision was published in the January issue of the *Elementary School Journal*. The following paragraphs may be quoted here as containing the essence of the decision.

One article of the constitution is devoted to municipal affairs and the organization of cities and villages. Another article of the constitution is devoted to education and provides for the establishment of district schools. With reference to the interest of the state in the two fields there is a wide difference. Local municipalities are organized for the purpose of dealing with matters of local concern. In such matters the state has little or no interest. The state, however, does have an interest in the education of its entire citizenship, an interest so deep and substantial that the framers of the constitution not only made provision for the establishment of district schools but made provision for the creation of a school fund, the income of which should be devoted to the maintenance of district schools throughout the state. . . . .

If the field of legislation upon the subject of education belongs to the state, it belongs to it in its entirety. If the cause of education is not a subject of municipal regulation, the municipality cannot touch it or interfere with it in the slightest degree. School buildings are an essential agency in the state's educational scheme, and to allow municipalities a voice in the construction, repair, control, or management of the school buildings within their borders is to yield to them the power to frustrate the state's plan in promoting education throughout the state. If power be granted to interfere in this respect, there would be no logical limitation to municipal interference with the district schools. . . . .

These considerations lead irresistibly to the conclusion that although the boundaries of a school district may be coterminous with the boundaries of a city, there is no merger of the school-district affairs with the city affairs. They remain separate and distinct units of government for the purpose of exercising separate and distinct powers and for the accomplishment of separate and distinct purposes. It follows that the so-called "home-rule" amendment imposes no limitation upon the power of the legislature to deal with the subject of education, and this applies to every agency created or provided and to every policy adopted by the legislature having for its object the promotion of the cause of education throughout the state.

PROFESSIONALISM AMONG HIGH-SCHOOL ATHLETES

The first page of the sporting section of the *Chicago Daily Tribune* for December 24, 1925, contained the following under the heading, "Views and News of Sports."

The athletic board of the public schools has ruled on the case of the four Englewood High School boys who confessed playing against the Cardinals in a professional game. The penalty bars the boys from all future participation in sports as amateurs. It brands them as gridiron professionals. When the boys complete high school, they may enter college, but they can never play on college teams.

The board had the right to fix any penalty that its members honestly believed to be just. The board might have excused the boys on the grounds that they played the game as a "lark," that they did not receive a cent for their playing, and that they had been told that it was only a practice game with no spectators. The board might have suspended the boys for six months or a year. The board did neither. It showed no leniency whatever. The board was as drastic in its ruling as it might have been had the boys been paid to play and had they played with their eyes open to the consequences. It was the task of the board to fix the penalty, and doubtless it acted with sincerity. We do not criticize the penalty, but we do call attention to these facts: The present rules of amateurism are as farcical as the game in which the Englewood boys played. Amateurs in golf make more money than do professionals—witness Bill Mehlhorn's resignation as a professional to turn amateur for the avowed purpose of increasing his income. Amateurs in tennis live in luxury, spending the winter months enjoying the climate in Florida and in California. Coaches in the high schools of Chicago are paid members of professional football teams. One coach was recently quoted as admitting that he had been a professional for ten years. This included his college days. It is not so many years ago that football players —spotless amateurs—were permitted to turn in doctors' bills at the close of the season, and no one dared to call them professionals.

The board's ruling may keep four boys from college. Of course, a boy goes to college to get an education, but a boy who can and likes to play football probably goes to college with the making of the team as his chief ambition. Blacklisted in every college in the country, these four Englewood boys may lose their desire for a college degree. This may be bad logic, but it is good "dope."

In conclusion, we beg to suggest to the athletic board that leniency is sometimes a virtue. High-school boys have committed graver sins than playing for nothing in what they believed was a practice game.

Does anyone believe that there is a boy more than ten years of age in the United States who is so ignorant of the meaning of the word "amateur" that he would innocently play football under an assumed name on a field surrounded by spectators without suspecting what he was doing? The strain on ideals of sport is heavy these days, and high-school boys are certainly going to fall into temptation. Their friends ought to be cautious lest the fall cost more than the loss of amateur standing.

STATE CURRICULUM FOR HIGH SCHOOLS IN MINNESOTA

Superintendent H. H. Kirk, of Faribault, Minnesota, supplies the following information regarding the steps taken by the State Department of Education of Minnesota in prescribing the conditions for graduation in the high schools of that state.

The bulletin on *Standards for Graded Elementary and High Schools* issued in August, 1925, by the State Department of Education of Minnesota contained the following paragraph.

"No school board may under any condition issue a high-school diploma to any person who has not been certified to by the superintendent as having completed in a creditable manner the work covered by sixteen credits in a well-balanced course; and such credits must always include four unit credits in English and one unit credit in citizenship. In making up the sixteen credits required for graduation, not more than three such credits may be earned in any one of the fields of agriculture, general industrial training, home economics, or commercial training, and not more than five such credits may be taken from any combination of credits in agriculture, general industrial training, home economics, and commercial training."

While this paragraph struck at vocational training as a whole, it aroused the opposition particularly of the commercial departments in the high schools of the larger cities. There were a great many protests, verbal and written. On November 9, therefore, the state department sent out the following proposal as a substitute for the offending paragraph.

PROPOSED SUBSTITUTE FOR STANDARD 13, PAGE 18, BULLETIN OF STANDARDS FOR GRADED ELEMENTARY AND HIGH SCHOOLS

"All persons graduating from a four-year high school must have earned at least sixteen unit credits in a well-balanced curriculum. At least eleven of these sixteen unit credits must have been earned in the fields of English, natural science, the social studies, foreign language, and mathematics, and, of these eleven credits, four must be in English, and at least one must be based upon an eleventh- or twelfth-year course in American history and American government, in which a study of the Declaration of Independence and the Constitution of the United States is specifically provided for. The remaining five unit credits may be earned in the fields of music, art, commercial subjects, agriculture, general industrial training, and home economics, provided that not more than three unit credits are earned in any one of these fields except that of the commercial subjects. High-school diplomas shall be granted only to persons certified to the school board by the superintendent as having fully met the requirements set up in this standard."

The substitute is being looked upon with disfavor by many school superintendents, who consider it a backward step to a narrow academic curriculum, such as prevailed fifty or more years ago. The concession of the five credits in commercial work is viewed merely as an entering wedge.

Superintendent Kirk has written as follows to the state superintendent regarding the new requirements:

I feel that the regulation you are proposing as a substitute restricts local initiative, and for that reason I feel that I cannot give it my indorsement. I feel that you have been very liberal as regards the commercial subjects, but I feel that to restrict the other subjects as you suggest is a matter that should not be considered, and in the words that follow I shall try to give you my reasons.

I feel that to restrict the high schools of the state as you suggest would be an example of extreme centralization. I happen to know your views with regard to centralization in school matters. I recall having heard you address a group on the subject at one time, and I happen to know that you feel that such matters should be left, so far as possible, to the local communities. To restrict high schools, such as Faribault, from offering vocational subjects as they see fit would be a step toward centralization, and, for reasons that are as well known to you as to me, I feel that such a step would be inadvisable.

It seems to me that it is a backward step to hedge in the high schools in the allowing of credit for vocational subjects. The history of the American high school is a record of progress from a curriculum that was very narrow and circumscribed to one that is really broad and liberal. The history of the modern high school is as well known to you as it is to me, but I would like to mention briefly two or three phases of it.

The earliest high schools in the United States were the Latin schools of New England, and, as you know, these were copied from the Latin schools of Europe. The Latin schools had a curriculum that was very narrow indeed. In fact, it is on record that boys were often sent home from school because they annoyed the schoolmasters by speaking English. This state of affairs was the rule in Colonial days until Benjamin Franklin in 1749 induced a number of communities to take a further step in the establishing of academies. I have only recently read Benjamin Franklin's statement as to the need of such academies, and it sounds surprisingly like some of the arguments that are used today in favor of the junior high school and the junior college. In 1821 or thereabouts a further upward step was taken in the city of Boston, when it was decided by the school committee that the academies did not really meet the needs of the democracy, and, as a result, the free public high school, with a broader curriculum than ever before, was instituted. From this time to the modern high school of today the story is one of great progress all along the line, progress from a narrow and restricted policy regarding subject matter to a broad and liberal policy that will include all the children of all the people.

I feel that the regulation that you are proposing is one that will make it impossible for perhaps one-third of all the children of all the people to obtain a high-school diploma. I do not feel that everyone is equally fitted, either by capacity or by disposition, to pursue an academic curriculum. I feel that we need a liberal curriculum with close supervision from the state to see that it is administered efficiently.

I have endeavored in the preceding paragraphs to give my views as frankly as possible, and I hope that I have done so without giving you offense. In conclusion, I would state that I firmly believe that any such restriction as the one you propose would be very narrowing in its effect upon the chances of every American boy and girl to graduate from high school.

The academic curriculum is under fire from many different directions. It is certainly not going to satisfy the demands of the times to leave the fine arts, the commercial subjects, and the practical arts to adjust themselves to the school program as best they can after all the other subjects have been given full attention. The frank statement in the Minnesota program that the non-academic subjects can have only the time which is left shows so clear a commitment to the traditional subjects that the issue stands out clearly. It will be of interest to observe how far the new regulation can be enforced. The prophecy which the student of education ventures is that the regulation will not be accepted by the Minnesota high schools.

A DEVICE TO SUPPRESS UNPRODUCTIVE TUTORING

Yale University is to be congratulated on adopting the policy announced in the following press dispatch to the *New York Times*.

Yale University has adopted the policy of completing its freshman class list on the basis of the entrance examinations held in June and has decided to discontinue the September examinations for final candidates for admission, beginning with the class entering in 1927. The university made this announcement through Professor Robert N. Corwin, chairman of the Board of Admissions, who said that the fitness of applicants for admission to Yale would be determined by their school records, the confidential reports of their headmasters, and the entrance examinations taken immediately after the close of their school work.

"Under the present practice, most of those applicants who are burdened with admission conditions at the completion of the June examinations—those with but slight deficiencies as well as those hopelessly in arrears scholastically—plunge headlong into tutoring schools, in the hope of gaining a sufficient number of credits to give them admission in September," said Professor Corwin. "At the end of these examinations, however, but a small portion of the total number of these eleventh-hour applicants can be admitted. Those who are unsuccessful are left in a rather hopeless plight, since the class lists of most preparatory schools and colleges are then complete.

"Accordingly, it seems as unfair to require September examinations of any applicant whose deficiencies are such as to leave practically no hope of admission as it is unnecessary to require them of any candidate whose deficiencies in

June are insignificant. The few hectic gestures which may be made during the late summer months, usually under the direction of a coaching staff, have little predictive value and are of measurable benefit only to the tutoring school.

"This discontinuance of condition examinations is in accord with the best college procedure, since it has been found that the *ex post facto* meeting of requirements by condition examinations is not equivalent to doing the work regularly in course.

"The best proof of a candidate's fitness to meet the requirements of a new position is evidence that he has been successful under conditions not dissimilar to those in prospect. The interest of the Yale examiners is therefore centered upon the evidence of how each applicant has done his last job, which, in this case, is his preparatory-school course. This, after all, has the greatest predictive value as to his probable success in his next scholastic venture.

"The record of each candidate will, accordingly, be considered complete at the end of the admission examinations which immediately follow his four-year course. These examinations, which are required of each applicant, together with the confidential report of the school principal as to character and intellectual promise, will help the examiners to evaluate the school record with some degree of accuracy and thus will give ample evidence of the quality of the applicant's preparatory work.

"The plan to discontinue the September examinations for candidates about to enter college cannot be without favorable effect upon school work. It will add to the already large number of applicants who complete all the requirements for admission by the end of the June examinations. It will encourage the schoolboy to be forehanded with his work—to do his work in regular term and not to hope to recover lost ground through the belated efforts of coaches and trainers. It will discourage the student whose school course has been inadequate from attempting to enter college by taking a detour through a summer coaching school. Such short cuts rarely lead to the goal desired.

"This plan cannot but prove beneficial to both school and college."

THE CITIZENSHIP TRAINING ASSOCIATION

An organization called the Citizenship Training Association, with headquarters in Columbus, Ohio (301 Parkview Building), publishes each month a sixteen-page magazine, entitled, *Current Methods for Teaching Modern Citizenship Problems*. The director of the association is Reginald Stevens Kimball.

The association offers its magazine for $1.00 a year; a special rate is made in the case of teacher-training classes. It also offers to give help to teachers in looking up material for classes in citizenship. This service is rendered by the association without placing the teachers under any obligation.

A letter from the director describes the aims and the activities of the association as follows:

The Citizenship Training Association has the following aims:

1. To train American boys and girls to become better American citizens through—
   a) Studying current events and contemporary problems
   b) Realizing the meaning of American citizenship, its privileges, and its duties
   c) Engaging in activities which lead to a desire to serve the community and the nation
   d) Cultivating an attitude of interest in the world around them
2. To assist teachers in public and private schools in the training of their students by—
   a) Furnishing monthly helps
   b) Giving individual attention to special problems
3. To promote a realization of the importance of current-events study by—
   a) Preparing a methods course for teacher-training classes
   b) Securing a recognition of current events either as a separate study or as a vital part of existing courses in every curriculum

To this end it renders the following services: (1) a methods course in current-events teaching for students in normal schools and teachers' colleges and for teachers' reading circles; (2) courses on the Constitution and contemporary citizenship problems for use by teachers in the field; (3) a research department, keeping in touch with the latest developments in the teaching of the social sciences; (4) a service bureau (*a*) rendering individual assistance to teachers with special problems in current-events and citizenship classes and (*b*) showing administrators how to vitalize the whole curriculum by paying greater attention to current events; (5) public lectures on current-events methods; (6) a magazine, published monthly during the school year, giving timely suggestions for using available material on current events.

A COMMISSION ON BUSINESS MANAGEMENT AND SCHOOL ADMINISTRATION

The correlation of business management and school administration will be the subject of a nation-wide study by a commission, four members of which have been appointed by the Secretary of the Interior and the Secretary of Commerce. The commission was organized at the suggestion of Frank W. Ballou, president of the Department of Superintendence of the National Education Association for the purpose of inquiring into the whole problem of the relation of business management and school administration.

The members of the commission include John J. Tigert, United States Commissioner of Education, and Thomas E. Finegan, former superintendent of public instruction of the state of Pennsylvania, designated by Secretary Work of the Department of the Interior; Elliot H. Goodwin, resident vice-president of the Chamber of Commerce of the United States, and Ernest Greenwood, vice-president of the Board of Education of the District of Columbia, designated by Secretary Hoover of the Department of Commerce; George D. Strayer, of Columbia University, and John H. Beveridge, superintendent of schools, Omaha, Nebraska, designated by Superintendent Ballou to represent the Department of Superintendence. It is contemplated that two members will be added to represent the National Association of Public School Business Officials.

The work of the commission will include the study of such fundamental questions as business administration and methods of financing, including taxation and bond issues for school purposes. The commission will study the construction of new buildings, the selection and purchase of sites for school buildings in such a way as to anticipate the growth of the population and provide adequate playground facilities and room for the extension of the school plant. The commission will also study the development of plans by competent architects within or without the school system; the supervision of construction; heating; lighting; ventilating apparatus and other machinery; upkeep; painting and repairing; replacement of school furniture and equipment; surfacing of yards and playgrounds; landscape gardening; the purchase of textbooks, paper, ink, and other materials used in actual instruction; and the provision of adequate equipment for special purposes.

Detailed plans for the survey will be completed early in February, and a preliminary report, setting forth the need for the work and defining its scope and purpose, will be made at the annual meeting of the Department of Superintendence, which will be held in Washington during the week of February 21.

SCHOLARSHIP AND ATHLETICS

A study made by C. W. Whitten, state manager of the Illinois High-School Athletic Association, reveals some interesting data

with regard to the 3,314 high-school boys who participated in the 1925 basket-ball tournaments conducted under the auspices of the association in Illinois. Mr. Whitten secured reports from the principals of the competing high schools with regard to the scholastic standing of the athletes. The percentage distribution of the 467 Freshmen, 773 Sophomores, 1,130 Juniors, and 944 Seniors is as follows:

Quarter	Freshmen	Sophomores	Juniors	Seniors	Total
Highest	27.8	27.1	33.0	39.1	32.6
Second	29.5	36.1	35.6	30.8	33.5
Third	24.4	26.1	21.0	20.3	22.5
Lowest	18.2	10.6	10.6	9.7	11.4

The study also revealed the fact that the average age of the freshman athletes was six and one-half months greater than the average age of the boys of the freshman class; the sophomore athletes were three months older than the average of their class; the junior and the senior athletes showed no appreciable variation from the average ages of their respective classes.

EFFECTIVE STIMULATION

Teachers in the public schools of Terre Haute, Indiana, will not be eligible for reappointment after June, 1926, if they have taught five years without having attended a summer school or its equivalent. They must have earned credit for the study of at least two subjects for a minimum of five and one-half weeks, with not less than twenty-two recitation hours in each subject.

A HIGH-SCHOOL LOAN FUND

A scholarship fund of $7,215 is available to graduates of the high school of Muskegon, Michigan, who need assistance in continuing their education. Three per cent interest is charged on loans from the fund, which was started with $30 by the class of 1909.

NEW LIMITS FOR SECONDARY EDUCATION

At a recent conference of delegates from eastern colleges, President Frank J. Goodnow of the Johns Hopkins University made the following statement.

The line of cleavage between secondary and advanced work is drawn at an improper place, so that the use of secondary methods is unduly prolonged and the use of methods best suited to advanced work is unduly postponed. The cleavage is purely historical and is no longer justified. It is in view of these considerations that I have proposed that the Johns Hopkins University shall at some time in the near future abandon the existing work of the first two years of college and shall consolidate what is now, roughly speaking, the work of the last two years of college with the present graduate work, applying to all the advanced work essentially the methods and the standards that are applicable to our present graduate work.

The question of degrees, while theoretically not supremely important, is practically significant. Degrees are given and sought as a reward for the accomplishment of work. The Bachelor's degree has had a varied history in different countries. If we could adopt the French practice and give this degree at the end of the secondary period, the degree would become a junior-college degree. The higher degrees of Master and Doctor would then be reserved for advanced work.

That this solution is at present possible is hardly to be hoped, but it is conceivable that an institution wishing to devote itself exclusively to advanced non-professional work might, after the manner of many law and medical schools, cease giving the A.B. degree and give merely an advanced degree.

If the plan outlined could be worked out by the Johns Hopkins University, I feel that we should make a distinct contribution to American higher education, even if it were not generally adopted. Capable young men could begin work earlier than at present, and, because of the serious purposes of the student body, many distracting influences of American college life which are deplored by some of us in charge of institutions of higher education would be eliminated.

A few days after this statement was made the following announcement was sent out by the Associated Press.

The Board of Trustees of the Johns Hopkins University has approved a plan to abolish the Johns Hopkins Undergraduate School. To become effective, the plan must be approved by the state legislature.

The plan was first submitted a year ago, but at that time it met with opposition on the board of trustees. Under the plan as now approved, the curriculum of the Johns Hopkins University would be restricted to advanced courses, with two years of college work elsewhere required for entrance.

SABBATICAL LEAVE FOR NEW YORK TEACHERS AND PRINCIPALS

Sabbatical leave for the school term beginning February 1, 1926, was recently granted by the Board of Education of New York City to 316 teachers and supervisors of the city schools upon the recommendation of the board of superintendents. The by-law which limits

the number of such grants to 150 during any one term was suspended for the purpose.

The superintendents reported that 520 teachers and principals had made application for the privilege. For the first time they recommended that supervisors be granted sabbatical leave, naming eight principals and thirteen assistants to principals.

A study of the purposes assigned by the applicants for requesting the leave of absence reveals that, of the 316 whose applications were approved, 20 announce a desire to study; 126 will travel; and 80 desire the time for restoration of health. More than two hundred gave "rest" as an additional reason for making application for this vacation with part pay. Many will combine rest and travel; others, study and travel; still others, travel and restoration of health.

A PLAN OF CURRICULUM REVISION

The school system of Long Beach, California, announces in a four-page pamphlet the plan of curriculum revision which it has adopted. The following paragraphs describe the plan.

On July 20, 1925, the Long Beach Board of Education adopted a resolution which provided for the employment of a director of curriculum to function as a member of the Department of Research. An appropriation of $1,500 was made for the retention of curriculum experts outside the school system for lecture purposes and for the examination and correction of manuscripts. Office equipment and clerical help were also provided. . . . .

The method that Long Beach has adopted is to put the writing of the original draft or fundamental course into the hands of persons with a wide view. They will write in consultation with experts, turn their work over to teacher committees for trial and criticism, and act in an editorial capacity when the committees have completed their work.

The success of this plan is, of course, conditioned on well-trained writers guided by subject experts, a teaching corps willing to accept the responsibility of trying courses and criticizing them constructively, and writers able to receive the changed courses and satisfy the teaching staff of their open mindedness to the criticism of their work. It is believed that this plan will result in a body of courses founded on good theory, grounded in classroom practice, and received by a teaching staff loyal to these courses and broadened in the understanding of the work of the schools.

After a director of curriculum had been selected, the University of California was asked by the school administration to appoint the director as an extension instructor to give a course in curriculum as a part of the University's extension program in Long Beach. The university was told that the major pur-

pose in desiring the curriculum class was to provide for the training of a considerable number of the Long Beach teachers for active participation in the program of curriculum revision and construction. The university authorities evinced a sympathetic interest, and, after the necessary preliminaries, the desired appointment was secured, and the curriculum class was officially established.

The course, which consists of fifteen class meetings of two hours each, gives two hours of upper-division credit. The state board of education has accredited the course toward the administration and supervision credentials. There are two sections of thirty-five members each, which meet on alternate Monday afternoons. In one section, the major part of the project work of the latter half of the course is to be social science; in the other section, English. In Grades IV to XII, inclusive, social science and English are the subjects that have been chosen for revision this year.

A HANDBOOK FOR SCHOOL TRUSTEES

The California Teachers' Association, 930 Phelan Building, 760 Market Street, San Francisco, California, has published a forty-eight page pamphlet under the title, *California School Trustees Handbook*. This pamphlet, which was prepared by A. R. Heron, is in the form of a catechism. It aims to give school trustees information on matters of administration which is in accordance with the best practice of American schools and in keeping with the California school laws.

When one thinks of the lack of contact with school matters which is characteristic of hundreds of persons who are chosen by their fellow-citizens to govern school systems, one wonders that attention has not been given before this to the possibility of informing school trustees through authoritative material of the type which the California Teachers' Association has published. An ignorant school trustee can do much in a very short time to embarrass school superintendents, principals, and teachers. Much time which should be spent in administering schools is spent by school officers in trying to keep enthusiasts on the school board from making blunders in administration. Every state teachers' association in the United States ought to follow the plan suggested by California and begin formulating information for members of boards of education. This pamphlet suggests others. There might be a pamphlet for parents and another for city mayors and members of city councils.

An extract from the California pamphlet which will give an idea of its character is as follows:

32. *Can school property be used for other than school purposes?*

Yes, under certain conditions.

Trustees in their discretion may rent the school property. (1608, subdiv. 3.)

Use of school property may be granted on such conditions as the board decides, for "public, literary, scientific, recreational, or educational meetings." Such use must not interfere with school work nor be granted in such manner as to constitute a monopoly for any person or organization. (1613.)

Schoolhouses are made civic centers to be used without charge for civic-center purposes. (Act 7508.)

33. *May trustees hire a janitor?*

Yes, it is their duty to do so. If they fail to do so, the county superintendent must appoint a janitor who must be paid out of the school fund of the district. (1609, subdiv. 2 and 5-*b*; 1543, subdiv. 13.)

34. *May a teacher be hired as janitor?*

In one-room and two-room schools, a teacher may be hired as janitor when no other satisfactory janitor service can be secured. (Rules of State Board of Education, sec. VI, par. *b*.)

35. *May the child of a trustee be employed as janitor?*

No.

The trustee would have an interest in the earnings of his minor child and so such employment would be contrary to law. (1876.)

36. *For how long a term may a janitor be employed?*

Not longer than the end of the ensuing school year. (1609, subdiv. 2.)

37. *May a trustee make repairs or furnish supplies to the district and be paid therefor?*

Yes, under certain conditions. In districts having one or two teachers (on average daily attendance) a trustee may be paid for repairs, fuel, or supplies.

The requisition for payment in his favor must be signed by the other two trustees. (1876.)

38. *When should the school budget be made?*

The school budget must be made in the month of June. (1612*a*.) It should be prepared in May, if possible.

39. *In what form should the budget be prepared?*

The budget must be prepared on blank forms furnished by the county superintendent of schools. (1612*a*.)

HIGH-SCHOOL COSTS IN TEXAS IN 1924[1]

A. W. EVANS
Texas Technological College, Lubbock, Texas

The main problem of this study has been to determine the costs of instruction in the different subjects taught in the high schools of Texas during the school year 1923–24. These costs are presented in terms of cost per credit hour for each pupil in each subject. The credit-hour costs for each subject have been determined separately for 390 senior high schools and twelve junior high schools. The 390 senior high schools have been divided into seven groups according to enrolment, and tables have been prepared showing the costs in each of the seven groups.

In addition to the major problem, certain minor problems have been raised, as follows: (1) to determine as many as possible of the factors involved in the varying costs of the different subjects in the different high schools; (2) to compare the costs of the various subjects in junior high schools in certain cities with the costs of similar subjects in senior high schools in similar cities.

With few exceptions, this study does not attempt to compare its findings with the findings resulting from like studies made in other states. This policy was fixed upon deliberately, because school costs have changed so rapidly in the last few years that the standards set up in the previous studies are not in vogue even where they were made.

In order to solve the major problem, three different types of data were essential. It was necessary to know (1) the daily schedule and salary of each teacher in each high school covered by the investigation and (2) the class enrolment in each subject taught by each teacher and the total high-school enrolment. Furthermore, in the case of superintendents, principals, and others doing only part-time teaching, certain facts were necessary in order to determine the portions of their salaries chargeable to actual teaching activities.

[1] The writer of this article is greatly indebted to B. F. Pittenger, of the University of Texas, for assistance in planning and reporting the study.

For the securing of data of the first two types, blanks were prepared and sent to all classified and accredited high schools in the state and to such others as were conveniently listed.[1] These blanks asked for the daily program of each teacher, the salary of each teacher, the number of pupils in each class, and the time spent by each teacher in school work outside the classroom. Replies were received from more than five hundred high schools. Each daily program was studied, and, on the basis of the salary schedule, the cost of instruction in each high school was computed. Any blank lacking the information sought or showing important omissions was discarded. The final selection included reports from twelve junior high schools and 390 senior high schools.

In computing costs in the subjects taught by the superintendent or principal, care was taken to ascertain, as accurately as possible, the equitable amount of the salary belonging to such subjects. A detailed study of each daily program affected by this complication was made in the effort to eliminate that part of the salary properly chargeable to administration and supervision. In order to get a satisfactory basis, letters were written to typical superintendents and principals asking how they would divide their salaries on the basis of teaching and supervision. From the replies received, working proportions were established as aids in making the weighted computations.

Table I presents data for one of the high schools with an enrolment of more than one thousand.

One important consideration was to determine the cost unit to use. There are two in current use: (1) the student hour (clock hour) or multiple of the student hour and (2) the cost per credit. The student hour is an absolute unit measuring a certain quantitative amount under all possible school conditions. By this standard can be measured the cost of a unit of instruction, whether the year is long or short, the daily periods long or short, or the classes large or small. Its limitations are that it is unnatural and arbitrary and that it is not the unit commonly used in evaluating school work. The cost per

[1] Since the writer was chief supervisor of the high schools of Texas at the time the study was made and had continuous dealings with all secondary schools, no difficulty was encountered in securing prompt replies from the greater number of schools.

TABLE I

DATA FOR THE BRYAN STREET HIGH SCHOOL, DALLAS, TEXAS*

	Cost per Credit Hour	Total Cost	Number of Pupils Enrolled	Percentage of Pupils Enrolled	Median Class Enrolment	Number of Classes	Number of Teachers	Median Salary of Teachers
English	$14.27	$18,537	1,299	92	31.5	42	10	$1,987.50
History	12.56	13,256	1,055	75	32.0	35	6	2,100.00
Mathematics	14.10	16,900	1,191	85	30.0	41	8	2,175.00
Science	24.63	8,841	359	26	23.0	15	4	2,375.00
Latin	19.05	4,725	248	18	27.5	10	3	2,325.00
Spanish	12.46	6,664	535	38	29.0	17	3	1,897.50
Home economics	30.11	6,865	228	16	19.0	13	4	1,982.50
Commercial subjects	15.38	7,108	462	33	29.0	18	3	2,175.00
Manual training	33.68	8,555	254	18	16.0	15	4	2,112.50
French	31.25	1,500	48	3	12.0	4	1	2,225.00
Music	20.14	1,974	98	7	.....	5	1	2,050.00
Public speaking	15.80	1,075	68	5	.....	3	.....	.....
Military training	8.42	2,400	285	20	.....	4	.....	.....

* Enrolment, 1,406.

credit is the evaluation given for a semester's work in a subject having one daily recitation, practically one thirty-second of a standard four-year high-school course. Owing to variations in the length of school terms and of daily class periods, it is readily apparent that the cost per credit is not ordinarily standard from the point of view of time. It is standard, however, from the college-entrance standpoint.

Since all three-year and four-year classified and accredited high schools in Texas are required to have terms of nine months and daily recitation periods of not less than forty-five minutes, including changes in classes (in fact, all such schools have forty-five-minute periods except a few which are using the sixty-minute supervised-study periods), the credit hour may be used in Texas as a basis for costs with the assurance that it combines the advantages of both the other cost units without being curtailed by the limitations of either. A credit hour[1] (yearly cost per pupil), as here used, is the time consumed by one pupil in five daily recitations a week for thirty-six weeks. Its value, therefore, is $\frac{45}{60}$ of 180 clock hours, or 135 student hours, if computed on the forty-five-minute recitation basis; $\frac{60}{60}$ of 180 clock hours, or 180 student hours, if computed on the sixty-minute recitation basis. Hence it is a very simple matter to translate credit hours into one thousand student hours for purposes of comparison. The credit hour is a natural basis, is easily understood as a year's work of one pupil under standard conditions, and is simpler and more readily computed than is the student hour. For many purposes the cost per credit hour is identical with the annual per capita cost so familiar to students of educational statistics.

The large number of reports from senior high schools made possible a division into several groups on the basis of enrolment. The desirability of such division has been made apparent in several studies which show that costs in large schools are not comparable with costs in small schools. This fact is brought out clearly by Wheat's study of instructional costs in West Virginia high schools,[2]

[1] Charles W. Hunt, *The Cost and Support of Secondary Schools in the State of New York*, chap. vii. Report of the Educational Finance Inquiry Commission, Vol. III. New York: Macmillan Co., 1924.

[2] Harry G. Wheat, "Costs of Instruction in the High Schools of West Virginia," *School Review*, XXVI (June, 1918), 446.

by Monroe's survey of costs of instruction in Kansas high schools,[1] and particularly by Hunt's report of the recent findings of the Educational Finance Inquiry Commission.[2] Moreover, the purpose of this report is to furnish norms or standards with which local school authorities may compare the costs in their own schools. The superintendent or the school board, knowing the size of the local school, can readily make comparisons with conditions in other schools of like size. Both of these reasons urge not only that this large number of schools of all sizes should be separated into groups of schools of like size but also that there should be as many of these

TABLE II

DISTRIBUTION OF 390 TEXAS HIGH SCHOOLS ON THE BASIS OF ENROLMENT

Enrolment	Group	Number of Schools
1,000 or more	I	12
500–999	II	17
350–499	III	16
200–349	IV	31
100–199	V	126
50– 99	VI	139
9– 49	VII	49
Total		390

groups as is compatible with reliability. Seven groups have therefore been made, as shown in Table II.

Table III is a summary of the facts obtained from all the reports of the various schools. This table shows the median and the first- and third-quartile costs for each subject in each high-school group. It also presents, in the extreme right-hand column, the median of all the group medians for each subject, which is an approximation to the median cost of each subject in the entire group of schools.

For practical purposes, in comparing the costs of instruction in a selected school with the tabulated costs shown in this table, two considerations should be kept in mind. First, comparisons should be

[1] Walter S. Monroe, *The Costs of Instruction in Kansas High Schools.* Studies by the Bureau of Educational Measurements and Standards, No. 2. Emporia, Kansas: Kansas State Normal School, 1915.

[2] Charles W. Hunt, *op. cit.*

TABLE III

COMPARATIVE COSTS OF THE DIFFERENT SUBJECTS IN THE VARIOUS GROUPS OF HIGH SCHOOLS

	Group I	Group II	Group III	Group IV	Group V	Group VI	Group VII	Median of Group Medians
English:								
First quartile	$12.43	$ 9.14	$ 8.24	$ 7.77	$ 6.96	$ 8.06	$14.03	.....
Median	13.18	10.93	9.82	9.04	8.57	9.86	17.59	$ 9.86
Third quartile	14.16	11.73	11.20	10.64	9.98	12.45	26.01	.....
History:								
First quartile	11.36	9.87	6.56	6.49	7.04	8.18	15.39	.....
Median	12.67	10.85	9.36	8.65	8.18	11.02	19.65	10.85
Third quartile	13.55	12.40	11.44	10.56	10.00	13.88	24.00	.....
Mathematics:								
First quartile	11.67	9.78	8.69	8.01	8.26	10.07	18.37	.....
Median	12.69	11.98	10.03	10.05	9.98	12.90	25.00	11.98
Third quartile	14.81	13.71	11.27	11.95	11.71	16.00	34.57	.....
Science:								
First quartile	17.51	14.89	10.98	11.96	11.82	13.92	19.42	.....
Median	22.21	17.38	16.59	15.79	15.25	18.00	26.08	17.38
Third quartile	25.82	20.50	17.22	22.86	19.70	25.96	37.80	.....
Latin:								
First quartile	15.76	12.29	10.83	9.04	10.90	12.84	24.76	.....
Median	17.43	12.91	13.60	14.33	14.53	19.76	31.77	14.53
Third quartile	18.79	15.79	19.05	19.56	19.45	31.00	37.50	.....
Spanish:								
First quartile	11.44	9.42	8.98	8.43	8.33	10.00	14.54	.....
Median	12.49	11.93	10.90	10.51	10.09	13.23	18.70	11.93
Third quartile	14.09	14.15	13.25	12.16	13.63	19.35	24.43	.....
French:								
First quartile	20.84	.....	.....	.....	.....	.....	.....	.....
Median	28.96	.....	.....	.....	.....	.....	.....	28.96
Third quartile	36.95	.....	.....	.....	.....	.....	.....	.....

TABLE III—*Continued*

Vocational agriculture:*								
First quartile	.....	.....	.....	.....	.....	.....	.....	.....
Median	.....	.....	.....	.....	$70.59	$53.86	$83.33	$70.59
Third quartile	.....	.....	.....	.....	.....	.....	.....	.....
General agriculture:								
First quartile	.....	.....	.....	.....	.....	.....	.....	.....
Median	.....	.....	.....	.....	16.90	29.66	23.33	23.33
Third quartile	.....	.....	.....	.....	.....	.....	.....	.....
Home economics:								
First quartile	$23.29	$19.42	$18.44	$13.97	18.30	22.50	22.08	.....
Median	26.46	23.24	23.99	24.28	26.14	30.00	28.12	26.14
Third quartile	35.05	26.69	26.25	34.32	34.45	40.90	31.23	.....
Manual training:								
First quartile	24.29	26.25	30.43	25.47	.....	16.87	.....	.....
Median	32.11	28.15	34.48	42.85	35.89	46.54	44.57	35.89
Third quartile	40.76	39.40	37.02	44.90	.....	56.25	.....	.....
Commercial subjects:								
First quartile	11.28	11.34	12.80	12.50	10.96	16.07	20.83	.....
Median	12.26	14.28	15.87	13.96	18.75	19.85	28.38	15.87
Third quartile	13.61	17.90	23.83	17.08	27.55	42.26	43.26	.....

* Iron-clad twelve-months' contracts of all teachers, which include necessary automobile upkeep and mileage expenses, together with the one and one-half units of credit allowed for one credit hour, very materially increase the costs in this subject.

made with the costs in the enrolment group to which the school belongs. The medians of the group medians have little practical significance in making such comparisons. Second, the range between the first- and the third-quartile costs, called by Bobbitt the "zone of safety," is of much greater value than the median. A divergence from the "zone of safety" should be interpreted as a danger signal rather than as final evidence in the case. The medians, however, will serve better than will the quartile ranges to bring out the relative costs of the different subjects. Table IV shows the subjects arranged according to their cost rankings, from the highest to the lowest, for each of the high-school groups.

The most cursory inspection of Table IV shows that certain subjects always rank high in relative costs and that certain others always rank low. Thus, vocational agriculture is invariably the most costly subject in those groups of schools in which it is taught. Manual training and home economics rank next to vocational agriculture in Groups V and VI and rank first and second, respectively, in Groups II, III, and IV. French appears to cost more per credit hour than does home economics in the largest schools. At the other extreme, we find history and English appearing as the cheapest high-school subjects in all groups except Groups I and VII. In the largest high schools Spanish and the commercial subjects are even cheaper. Mathematics occurs third from the bottom more often than does any other subject. The subjects of medium cost, arranged from the highest to the lowest, are science, commercial subjects, Latin, and Spanish.

Table V is a compilation of the rankings of costs of instruction from ten studies in various states representing thirteen different groups of schools. Latin and the modern languages rank relatively high in cost and mathematics and history comparatively low. Commercial subjects fluctuate with remarkable extremes of variation. Wherever found, French ranks particularly high on account of very small classes, while music ranks low on account of large classes. Latin also ranks high because of small classes. The data from the twenty groups represented in Tables IV and V indicate that vocational agriculture and manual training are the most expensive studies

TABLE IV

COMPARATIVE RANK OF SUBJECT COSTS FROM THE HIGHEST TO THE LOWEST IN THE VARIOUS GROUPS OF HIGH SCHOOLS

Rank	Group I	Group II	Group III	Group IV	Group V	Group VI	Group VII
1...	Manual training	Manual training	Manual training	Manual training	Vocational agriculture	Vocational agriculture	Vocational agriculture
2...	French	Home economics	Home economics	Home economics	Manual training	Manual training	Manual training
3...	Home economics	Science	Science	Science	Home economics	Home economics	Latin
4...	Science	Commercial subjects	Commercial subjects	Latin	Commercial subjects	General agriculture	Commercial subjects
5...	Latin	Latin	Latin	Commercial subjects	General agriculture	Commercial subjects	Home economics
6...	English	Mathematics	Spanish	Spanish	Science	Latin	Science
7...	Mathematics	Spanish	Mathematics	Mathematics	Latin	Science	Mathematics
8...	History	English	English	English	Spanish	Spanish	General agriculture
9...	Spanish	History	History	History	Mathematics	Mathematics	History
10...	Commercial subjects	.....	.....	.....	English	History	Spanish
11...	.....	.....	.....	.....	History	English	English

TABLE V

COMPARATIVE RANK OF SUBJECT COSTS FROM THE HIGHEST TO THE LOWEST IN THIRTEEN GROUPS TAKEN FROM TEN DIFFERENT COST STUDIES*

RANK	MONROE (1915)		BOBBITT (1915)	TOPEKA SCHOOL REPORT (1915)	GRAND RAPIDS (1916)	CHILDS (1917)	ST. LOUIS (1918)†
	Classes I and II	Class III					
1...	Normal training	Normal training	Manual training	Manual training	Domestic science	Drawing	French
2...	Manual training	Commercial subjects	Normal training	Science	French	Science	Chemistry
3...	Ancient languages	Manual training	Latin	Latin	Mathematics	Manual training	Manual training
4...	Modern languages	Science	Commercial subjects	Manual training	Science	Latin	Domestic science
5...	Agriculture	Modern languages	Modern languages	Mathematics	Commercial subjects	Home economics	Physiology
6...	Science	Agriculture	History	Domestic science	Domestic art	Modern languages	Physics
7...	Domestic science	Ancient languages	Domestic science	History	German	English	Domestic art
8...	History	Domestic science	Science	Commercial subjects	History	Mathematics	Latin
9...	Mathematics	History	Mathematics	German	Latin	History	History
10...	Commercial subjects	Mathematics	English	Physical training	Drawing	Commercial subjects	German
11...	English	English	Agriculture	English	Manual training	Physical training	English
12...	.....	.....	Music	.....	English	Music	Commercial subjects

* The names across the top refer to the authors of the different instructional cost studies or to the cities in which the studies were made.
† Adapted from data furnished by B. F. Pittenger from his unpublished manuscript on "Comparative School Costs," 1924.

TABLE V—*Continued*

Rank	Wilcox (1918)			Des Moines (1918)	Wheat (1918)	Homan (1920)
	Class I	Class II	Class III			
1	Drawing	Manual training	Normal training	Drawing	Modern languages	Manual training
2	Normal training	Normal training	Modern languages	Modern languages	Domestic science	Domestic science
3	Agriculture	History	Manual training	Latin	Manual training	Ancient languages
4	Manual training	Commercial subjects	Commercial subjects	Science	Latin	Science
5	Modern languages	Modern languages	History	Manual training	Science	Commercial subjects
6	Commercial subjects	Domestic science	Science	Mathematics	English	Modern history
7	Latin	Mathematics	Mathematics	English	History	English
8	Science	Science	Latin	Commercial subjects	Mathematics	History
9	Domestic science	Latin	English	History	Commercial subjects	Mathematics
10	History	English	Domestic science	Domestic science	Agriculture	.....
11	Mathematics	Music	Agriculture	Physical training	.....	.....
12	English	.....	Music	Music	.....	.....

in the high schools and English the least expensive. History and mathematics follow English with slight variations in costs.

The high cost of science is explained by the extra laboratory period, which increases the time devoted to the subject, as well as by the small number of classes often assigned to science teachers. The cost of home economics is high for three reasons: (1) the small classes in this subject, (2) the lengthened periods on account of its being treated as a laboratory science, and (3) the high salaries paid by federal-aid subventions. The exceedingly high cost of manual training is accounted for by reason of the very small classes, the

TABLE VI

MEDIAN CLASS ENROLMENT, MEDIAN SALARIES OF TEACHERS, AND MEDIAN COST OF EACH SUBJECT IN THE HIGH SCHOOLS OF GROUP I

SUBJECT	CLASS ENROLMENT		TEACHERS' SALARIES		MEDIAN COST PER CREDIT HOUR
	Median	Range	Median	Range	
English	28.50	22.5–34.0	$1,675	$1,270–$2,200	$13.18
History	29.25	25.0–34.0	1,824	1,260– 2,100	12.67
Mathematics	27.75	24.0–33.0	1,868	1,305– 2,175	12.69
Science	23.25	21.0–30.0	1,862	1,260– 2,375	22.21
Latin	22.25	16.5–30.0	1,862	1,327– 2,325	17.43
Spanish	27.00	19.0–33.0	1,706	1,260– 1,963	12.49
Home economics	19.00	13.0–26.0	1,824	1,350– 2,150	26.46
Commercial subjects	24.50	19.0–31.0	1,775	1,209– 2,250	12.26
Manual training	16.00	4.0–29.5	2,000	1,848– 2,500	32.11
French	14.50	7.0–27.0	1,750	1,260– 2,225	28.96

double laboratory periods, and the high salaries paid. Vocational agriculture far outdistances all other subjects in cost. This subject is under the control of the Federal Board for Vocational Education, and considerable portions of the costs are borne by federal funds. As it is a highly specialized form of education, high costs would naturally be expected. The unusually small classes add to the unit costs.

Since the time element is practically uniform in the Texas high schools studied, the major factors in instructional costs are the salary of the teacher and the number of pupils in the class. The factor of class size affects the cost of instruction more noticeably than does the salary factor. Table VI shows that when salaries are constant, as in history and home economics, the credit-hour cost is increased very perceptibly when the class size is decreased. On the

other hand, when the class size is approximately the same, an appreciable difference in salaries does not materially affect credit-hour costs. In the group of largest schools, mathematics and Spanish have classes with median enrolments of 27.75 and 27.00, respectively; the median salaries are $1,868 and $1,706, respectively, a difference of $162; yet unit costs vary only 20 cents. Whenever classes are small, as in home economics, manual training, or French, the cost is uniformly high, although the teachers' salaries may be slightly below the general median range.

The importance of class size as a factor in school costs has recently been emphasized from a new angle.[1] One educational leader says that either the high school must increase its class enrolment to forty pupils or the elementary school must reduce its class enrolment to thirty pupils; in any event, an adjustment must take place at one extreme or the other or at an intermediate point.[2] Recent studies have indicated that the size of high-school classes may be increased without impairing the efficiency of the instruction, particularly in certain subjects.[3] Such an increase would tend to decrease the costs of instruction and consequently to lower school costs, since *total school costs are directly proportional to instructional costs.*[4] Unit costs would also tend to decrease with the extension of the school year, which is both highly desirable and altogether probable as the socialization of education becomes more widespread in the future.[5]

Another factor affecting instructional costs is the year in which the course is given. It is a matter of common knowledge that school

[1] E. C. Hartwell, in an address delivered at the 1924 meeting of the Department of Superintendence of the National Education Association.

[2] R. G. Jones, "Possible Economies through Control of Business Administration," *Journal of Education*, XCIX (March 20, 1924), 318.

[3] *a*) C. O. Davis, "The Size of Classes and the Teaching Load in the High Schools Accredited by the North Central Association," *School Review*, XXXI (June, 1923), 412–29.

b) *Teaching Load in 136 City High Schools.* City School Leaflet No. 9. Washington: Bureau of Education, 1923.

[4] George D. Strayer and Robert Murray Haig, *The Financing of Education in the State of New York*, p. 43. Educational Finance Inquiry Commission, Vol. I. New York: Macmillan Co., 1923.

[5] H. G. James, *Municipal Functions*, chap. iv. New York: D. Appleton & Co.

costs have increased in recent years.[1] Accurate data for the Texas high schools have been difficult to obtain for purposes of comparison. However, the San Antonio survey[2] gives high-school costs for the year 1914. Table VII compares the instructional costs in one high school in 1914 with the costs in 1924. Home economics shows the greatest percentage of increase in cost, followed by science, mathematics, and Latin in the order named. Curiously enough, costs in the modern languages and history have actually decreased during the period from 1914 to 1924.

TABLE VII

COMPARATIVE COSTS OF INSTRUCTION PER 1,000 STUDENT-HOURS IN THE MAIN AVENUE HIGH SCHOOL (SAN ANTONIO, TEXAS) FOR THE YEARS 1914 AND 1924

	1914 (Bobbitt)	1924	Percentage of Increase
English	$ 67.00	$ 75.67	12.9
History	83.00	74.67	−10.0
Mathematics	69.00	79.33	15.0
Science	68.00	88.22	29.7
Latin	103.00	118.11	14.7
Modern languages	114.00	75.11*	−34.1
Home economics	83.00	129.50	56.0
Manual training	103.00	113.00	9.7
Average	86.25	94.20	9.2

* Spanish, $71.15 (30 classes, 756 pupils); French, $115.35 (5 classes, 86 pupils).

Psychological considerations indicate that superior teachers and especially favorable surroundings are needed during the first year of the high school in order that the wide gulf existing between the elementary school and the high school may be bridged as rapidly as possible and proper readjustment made to the new environment. Statistical studies show that the first year is the period of the greatest

[1] *a*) W. Randolph Burgess, *Trends of School Costs*. New York: Russell Sage Foundation, 1920.

b) Bulletins of the Research Division of the National Education Association on teachers' salaries published in 1922 and 1924.

[2] J. F. Bobbitt, *The San Antonio School System: A Survey*. San Antonio, Texas: San Antonio School Board, 1915.

mortality among high-school pupils.[1] In some quarters there is a tendency to employ young and inexperienced teachers for the first year of the high school and more experienced, better-paid teachers for the later years. This practice tends to lower costs in the beginning year of the high school and to raise them in the upper years, thus causing variation in unit costs of instruction.

The effect of total enrolment on relative costs is shown in Table III. If the reader will turn back to this table and read the median cost figures for almost any subject listed, starting with Group VII and reading back to Group I, he will observe that, as a rule, the costs decline as the size of the schools increases up to Group IV, after which they again increase. In other words, instructional costs are less in the medium-sized high schools than in the small and large high schools.

The size of the class determines in a very large measure the cost of instruction in a given subject. Next in importance is the salary of the teacher. The chronological time element is also important, in that all salaries fluctuate with changing economic conditions. The total high-school enrolment has a direct bearing on costs in schools with an enrolment of less than 100 to 125 pupils, which is higher than the stabilizing number required in New York (75)[2] or in West Virginia (90).[3]

The junior high school movement is in its infancy in Texas and has gained but little recognition as a distinct organic unit in the state's system of public education. However, the introduction of a city-wide system of eight white and two colored junior schools of a distinctly progressive type in San Antonio since the beginning of the school year 1923–24 has served to call attention in a very striking way to this newest addition to the high-school family.

Classes are larger and salaries are lower in junior high schools than in senior high schools (Table VIII) except when the junior high

[1] *a*) Leonard P. Ayres, *Laggards in Our Schools*. New York: Russell Sage Foundation, 1909.

b) C. H. Judd, *Secondary Education*, pp. 93–96. Texas Educational Survey Report, Volume III. Austin, Texas: Texas Educational Survey Commission, 1924.

[2] Charles W. Hunt, *op. cit.*

[3] Harry G. Wheat, *op. cit.*

schools comprise the eighth and the ninth grades. Here the mechanical organization and the salary schedules parallel those of senior high schools and are consequently not comparable with them as representing opposing types of schools. A ratio of 3:4 in costs of instruction between junior high schools and senior high schools is

TABLE VIII

MEDIAN CLASS ENROLMENT, MEDIAN SALARY OF TEACHERS, AND MEDIAN COST OF INSTRUCTION IN TWELVE SENIOR AND TWELVE JUNIOR HIGH SCHOOLS IN TEXAS AND COMPARATIVE COSTS IN THREE JUNIOR HIGH SCHOOLS IN NEW YORK STATE

	Median Class Enrolment		Median Salary of Teachers		Median Cost per Credit Hour		Yearly Cost per Pupil in New York State by Schools*		
	Senior High Schools	Junior High Schools	Senior High Schools	Junior High Schools	Senior High Schools	Junior High Schools	1	2	3
English	28.50	30.0	$1,675	$1,170	$13.18	$ 7.52	$ 4	$13	$11
History	29.25	29.0	1,824	1,170	12.67	8.84	14	.....	.....
Mathematics	27.75	30.0	1,868	1,305	12.69	7.94	11	.....	.....
Science	23.25	27.5	1,862	1,275	22.21	8.55	.....	22	1
Latin	22.25	28.0	1,862	1,650	17.43	10.45	.....	.....	.....
Spanish	27.00	26.0	1,706	1,525	12.49	10.72	9	24	14
Home economics	19.00	19.0	1,824	1,400	26.46	23.16	.....	.....	.....
Commercial subjects	24.50	18.5	1,775	1,675	12.26	19.09	.....	.....	.....
Manual training	16.00	16.0	2,000	1,600	32.11	24.24	.....	.....	.....
French	14.50	8.5	1,750	1,312	28.98	22.91	.....	.....	.....

* Incomplete data taken from Charles W. Hunt, *op. cit.*

shown by the reports from the schools. This ratio is found to exist with more or less variation in other studies of cost accounting[1] and is fast approaching a standard norm for purposes of comparison.

So far as costs are concerned, the junior high school is found to occupy a position practically midway between the elementary school and the senior high school. Pittenger states that "the bulk of the evidence seems to show that junior high school costs may be expected to fall somewhere between the costs of the elementary schools and the costs of the senior high schools."[2]

[1] "Current Facts on City School Costs." *Research Bulletin of the National Education Association*, II (January and March, 1924).

[2] B. F. Pittenger, Unpublished manuscript on "Comparative School Costs," 1924.

SUMMARY

1. The "zone of safety," or the inter-quartile range, for each high-school subject in each high-school group is summarized as briefly as possible in Table III. Taken in connection with the median costs, this may be regarded as the major contribution of this study.

2. Vocational agriculture, manual training, and home economics are almost invariably the most costly subjects; English, history, and mathematics are generally the least costly; and the other subjects, while varying among themselves in relative rank, maintain medium positions. These findings have been shown to agree in general with the findings of ten other studies of this type.

3. A new cost unit has been presented which is simple and easily understood and also readily convertible into the units used in other studies. This unit is used partly because it can be readily determined by untrained superintendents who may wish to compare conditions in their own schools with the standards here reported.

4. At least nine contributing factors are found to be involved in the determination of instructional costs. They are as follows: annual salary of the teacher, number of pupils instructed, length of school year, total school enrolment, number of teaching periods a day, number of teaching periods a week, number of pupils in each class, year in which the course is given, and stage of advancement in the high school. Relatively speaking, class size is the most variable factor and has the greatest weight in affecting unit costs.

5. Within broad limits, the ratio of costs per pupil between junior high schools and senior high schools of 3:4 was found to obtain in Texas as elsewhere. Likewise, the ratio of costs per pupil between elementary schools and junior high schools of 2:3 was accepted. This provides a working ratio of costs per pupil of 2:3:4 for the elementary school, junior high school, and senior high school, respectively. The practical value of this ratio is further increased by the recognition of the recently established formula that in all divisions of education instructional costs are directly proportional to total school costs.[1]

[1] Charles W. Hunt, *op. cit.*

A STUDY IN HIGH-SCHOOL SUPERVISION. I

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The purposes of the study reported in this article were twofold: (1) to find out from high-school teachers themselves the amount and the nature of the supervision received by them through the medium of classroom visitation during the first semester of the school year 1924–25; (2) to determine, through a study of supervisory procedure in classroom visitation, the extent to which supervisory policies are discoverable.

A questionnaire, organized in conformity with these purposes, was sent to teachers of four high-school subjects—home economics, shop, mathematics, and English. The inquiry was organized to obtain information with regard to the training, experience, and tenure of the teacher; the number and the length of the supervisory visits received during the semester; the supervisory officers who made the visits; and the number and the nature of the suggestions received from these officers following the visits.

Among the specific questions on which it was hoped the data obtained might shed some light are the following: "How does the supervision received by teachers with little or no teaching experience differ in nature and extent from that received by those with more extended experience?" "How does the supervision received by teachers new to a school system compare with that received by those who are, through longer tenure, older to the system?" "Do teachers who are inadequately trained receive more careful supervision than do those who are more adequately trained?" "Is supervisory aid extended alike to teachers in all subjects by all supervisory officers?"

The size and the number of schools represented.—The sources of information were the responses made to the inquiry by 451 teachers. These teachers were representative of schools widely distributed geographically and ranging in enrolment from thirty pupils to con-

siderably more than three thousand. A better conception of the size and the number of schools represented may be gained from the grouping of schools shown in Table I.

It was thought that the variation in supervisory practice would be greater among the smaller schools than among the larger ones. It seemed necessary, therefore, to secure information from a greater number of teachers in the smaller schools in the effort to discover the true practice there. Consequently, the number of inquiries sent to teachers in schools with enrolments of less than 600 pupils was greater than the number sent to teachers in schools with enrolments

TABLE I

SIZE AND NUMBER OF SCHOOLS REPRESENTED IN THE INVESTIGATION

Group	Range in Number of Pupils Enrolled	Number of Schools	Number of Teachers
I.....	30–299	229	241
II.....	300–599	108	111
III.....	600–899	38	43
IV.....	900 or more	51	56
Total.....	.....	426	451

of more than 600 pupils. It happened that the teachers in the smaller schools responded more generously to the inquiries, so that the schools classified under Groups I and II are better represented in the study than are the schools classified under Groups III and IV.

The school officers who assume responsibility for class visitation.—In this study the obligation of visiting the high-school teacher at work is assumed to be more or less seriously accepted by the superintendent of schools or his assistant, the principal of the high school or his assistant, the head of the department, and the special-subject supervisor. Because of the small amount of visiting done by the head of the department, the work of this officer has been omitted from the remainder of the discussion. The number of supervisory officers has been reduced to three by combining the work of those officers occupying similar positions. Thus, the work of the assistant superintendent is reported with that of the superintendent, and the work of the assistant principal is reported with that of the principal.

This makes it possible to compare the visiting done by three major officers—the superintendent of schools, the principal of the high school, and the special-subject supervisor.

The time allotted by school officers to supervision.—The time allotted by various supervisory officers to administrative and supervisory activities has been reported in several studies. The more complete studies deal specifically with the time allotment of the high-school principal. The tendencies, which seem to be typical, are well illustrated in the thorough study of the high-school principalship made by L. V. Koos.[1] Professor Koos obtained his information from 421 high-school principals. The high schools represented ranged widely in enrolment and were representative of communities of all sizes and in all sections of the country. Special effort was made to secure information along lines necessary to ascertain the proportion of the schedule day available for administrative and supervisory activities on the part of the principal. The following quotation illustrates the findings.

> The percentages of the schedule day principals have free for the discharge of their administrative and supervisory responsibilities show a marked tendency to enlarge as the high school increases in size. The median per cent advances from 26.9 in the group of smallest high schools represented to 100 in the largest, which is the same thing as saying that in high schools with a median enrolment of 161 only a fourth of the schedule day is set aside for performing the functions peculiar to the task, while in high schools with a median enrolment of 1,158—about a thousand students more—the entire day is available for such use. For the high schools of the two intervening groups [median enrolments of 279 and 579] these median per cents are 51.4 and 88.3.[2]

Since educational terminology confuses administration with supervision, it is difficult to determine just what proportion of the schedule day is available to the high-school principal for supervision. We are probably safe in concluding from Professor Koos's study that the principal has sufficient time for visiting at his disposal so that no teacher need be without at least one period of visitation in any semester. In most of the schools, sufficient time is at the principal's disposal to justify a time allotment for visitation of considerably

[1] Leonard V. Koos, *The High-School Principal.* Boston: Houghton Mifflin Co., 1924.

[2] *Ibid.*, pp. 71–73.

more than one period a semester per teacher. Since the responsibility for classroom visitation does not rest wholly on the high-school principal but is shared with the superintendent of schools and the special supervisors, we might expect a generous distribution of supervisory visits when the visits of all three officers are combined.

The distribution of the supervisory visits.—The distribution of the supervisory visits made by the three school officers is presented in Table II, which shows the percentage of the 451 teachers who received at least one visit from a supervisory officer during the first semester of the school year 1924–25. The teachers in the high schools

TABLE II

PERCENTAGE OF TEACHERS WHO RECEIVED AT LEAST ONE SUPERVISORY VISIT DURING THE FIRST SEMESTER OF THE SCHOOL YEAR 1924–25

Group	Percentage of Teachers Visited by the Superintendent	Percentage of Teachers Visited by the Principal	Percentage of Teachers Visited by the Supervisor
I.....	58.5	31.5	16.6
II.....	53.2	42.3	25.2
III.....	51.1	67.4	14.0
IV.....	32.1	44.6	35.7
Mean.....	53.2	39.2	20.8

in Groups I and II were visited more frequently by the superintendent of schools than by any other supervisory officer, while the teachers in the high schools in Groups III and IV received visits more frequently from the high-school principal than from any other supervisory officer. This is about what one would expect. Professor Koos found that the initiative for visiting classes for supervisory purposes was shared equally by the superintendent and the high-school principal in the high schools of the smaller communities. In the case of the large communities he found that the initiative for this activity rested with the principal in 60.6 per cent of the schools and was a shared responsibility in but 27.3 per cent of the schools. In no case did he find the initiative for visitation in the large schools to rest entirely with the superintendent.[1]

[1] Leonard V. Koos, *op. cit.*, p. 87.

Table II indicates that the supervision of the teachers in the larger schools is considered by the superintendents as a significant part of their work. It must be remembered, of course, that the teachers represented by the percentages for any group of schools are not the same in any two cases. It is of interest, however, to note the percentage of teachers who received no supervisory visits from each of the school officers during the first semester of the school year. The percentage of teachers who failed to receive visits from the principal is 60.8; from the superintendent, 46.8; and from the supervisor, 79.2.

The inquiry failed to obtain information with regard to the number of teachers who were subject to visitation by special supervisors. No comparison can be made, therefore, of the distribution of the supervisory visits made by special supervisors with the distribution of the supervisory visits made by principals and superintendents. A better basis for comparing the visits of the special supervisors with those of the other school officers is found in the number and the length of the visits and in the nature of the suggestions made following visitation.

TABLE III

NUMBER OF TEACHERS VISITED BY THE THREE SUPERVISORY OFFICERS

Group	Superintendent	Principal	Supervisor
I.....	141	76	40
II.....	59	47	28
III.....	22	29	6
IV.....	18	25	20
Total.....	240	177	94

The number of supervisory visits.—The number of teachers visited by the school officers is shown in Table III. While the high-school principals do not distribute their visits among the teachers as widely as do the superintendents, Table IV shows that the teachers selected for visitation by the principals average 2.0 more visits per semester than do the teachers selected for visitation by the superintendents. The number of visits per teacher made by the superintendents declines as the size of the school increases. In the case of

the principals, however, the average number of visits per teacher remains practically constant in all the groups of schools with the exception of Group I. The teachers in the schools of this group receive more visits per semester from both the superintendent and the principal than do the teachers in the schools of any other group. In the cases where visits by a special supervisor are reported, it may be noted that such visits do not occur with any considerable frequency, although the frequency with which supervisors visit teachers is considerably larger in the case of the schools of Group IV than in the case of the schools in the other groups.

If all the visits of the three supervisory officers represented in Table IV were properly distributed among the teachers and were of

TABLE IV

AVERAGE NUMBER OF VISITS MADE TO TEACHERS SELECTED FOR VISITATION

Group	Superintendent	Principal	Supervisor
I.....	4.1	6.6	1.8
II.....	3.1	5.0	1.2
III.....	2.0	5.8	1.8
IV.....	1.7	5.1	3.2
All groups..	3.8	5.8	1.9

significant length, it would seem that these visits would bring about considerable improvement in the instruction of the classroom teacher, provided the proper technique were employed by the supervisory officers. A study of the responses, however, failed to reveal any systematic plan for the distribution of the visits. The majority of the teachers who reported frequent visits from one supervisory officer also reported visits from one or both of the other officers. Thus, while three supervisory officers paid 2,123 visits to 451 teachers in the semester studied, the visits were so distributed as to leave 118, or 26.2 per cent, of the teachers without so much as a single supervisory visit.

The length of the supervisory visits.—The average length of the visits of the three officers is indicated in Table V. The average time spent in observing the teacher at work is approximately five times as great in the case of the special supervisor as in the case of the other

officers. The responses indicated that there were two types of special supervisors whose visits were being reported. The supervisors in the schools in Groups I, II, and III were, in the majority of cases, county or state supervisors of the vocational subjects. Many of these spent a whole day or a half-day in visiting, consulting, and conferring with

TABLE V

AVERAGE NUMBER OF MINUTES DEVOTED TO SUPERVISORY VISITS

Group	Superintendent	Principal	Supervisor
I.....	12	13	84
II.....	15	12	113
III.....	10	12	33
IV.....	13	9	18
All groups..	13	12	63

the teacher. The supervisors in the schools in Group IV were apparently also teachers in the subjects which they were supervising. The length of the visits of these officers more nearly approximated the length of the visits of the principals and the superintendents.

It would seem that the teachers are receiving too little attention from supervisory officers to be able to get much benefit from it. In

TABLE VI

AVERAGE NUMBER OF MINUTES ALLOTTED TO EACH TEACHER VISITED DURING THE SEMESTER

Group	Superintendent	Principal	Supervisor
I.....	58	89	149
II.....	48	61	142
III.....	21	72	61
IV.....	22	47	60
All groups..	49	73	122

some cases the average number of minutes of official visitation allotted to the teachers for the whole semester is a little more than a single recitation period. This is more exactly shown in Table VI.

The data presented indicate that the visits of superintendents and principals are insufficient in length and that the visits of super-

visors are insufficient in frequency. The real value of the visits, however, does not necessarily lie in either their length or their frequency but rather in the measurable or describable service rendered the teacher. In order to obtain information regarding this service, the teachers were asked to indicate the nature of the suggestions given them by the supervisory officers after each visit.

Oral and written suggestions following visitation.—Table VII shows the percentage of visits made by supervisory officers which were followed by written suggestions to the teacher. It is evident that the superintendents and the principals make but little use of written reports or suggestions following supervisory visits. The supervisors apparently make considerable use of written reports;

TABLE VII

PERCENTAGE OF SUPERVISORY VISITS FOLLOWED BY WRITTEN SUGGESTIONS TO THE TEACHER

Group	Superintendent	Principal	Supervisor
I.....	3.6	2.8	42.2
II.....	3.8	1.7	28.6
III.....	4.4	2.9	45.4
IV.....	0.0	1.5	4.6
All groups..	3.6	2.4	25.8

examination of the data shows that this is especially true of the supervisors of the vocational subjects. The percentage of supervisors in the schools of Group IV who make use of written suggestions is small. It will be remembered that the visits of the supervisors in this group of schools were considerably shorter than the visits of the supervisors in the schools of Groups I, II, and III. It seems that in those schools where the supervisors are also teachers there is a tendency for the visits of the supervisor to become more nearly like those of the superintendent and the principal in frequency, length, and nature.

The inquiry also obtained information from the teachers which would indicate the frequency with which the school officers followed their visits with oral suggestions of supervisory intent. Table VIII shows the percentage of visits which were followed by oral suggestions. As in the case of the data presented in Table VII, there is

little evidence that the superintendents and the principals made suggestions to the teachers based on observation of the teachers at work. The supervisors made a more creditable showing in this respect. They followed their visits with either oral or written suggestions and not infrequently with both. Especially is this true of the supervisors in the schools classified under Groups I, II, and III.

While there is some evidence of supervisory effort following visitation, the data indicate that such effort is not very great. The negative aspects of the situation may illustrate this fact better. If it may be assumed that a supervisory visit is of little value to a teacher unless some effort is made to make the results of the observation available to the teacher, the negative aspects can be shown by

TABLE VIII

PERCENTAGE OF SUPERVISORY VISITS FOLLOWED BY ORAL SUGGESTIONS TO THE TEACHER

Group	Superintendent	Principal	Supervisor
I.....	16.4	19.0	62.0
II.....	13.7	11.1	37.1
III.....	4.4	9.5	54.5
IV.....	16.6	9.4	18.4
All groups..	15.3	14.5	40.3

computing the percentage of teachers who either were not visited at all by the supervisory officers during the semester or else received no suggestions following any of the visits. The results would then appear as shown in Table IX. It seems that each officer benefited but a very small percentage of the teachers. The responses showed also that, as the visits were distributed, 308 teachers, or 68.3 per cent, received no suggestions from any one of the three supervisory officers. No attempt at evaluation has been made in the case of the 31.7 per cent of the teachers who received suggestions. Very likely, many of these suggestions were simply remarks, and the percentage of teachers who really received suggestions is considerably smaller.

This absence of supervisory effort may partly explain why teachers in the cities often complain about the large amount of supervision to which they are subjected. They may feel that there is a disproportionate number of supervisors and too much inspectorial visita-

tion or, judging by the amount of help received, they may believe that the high-salaried supervisors are not worthy of their hire.

Attitudes of teachers toward supervision.—The large number of reflections included by the teachers in their answers to the inquiries can be classified roughly into three types of attitudes toward supervision.

The first and most common attitude discernible was one of sympathetic apology for the present status of supervision. This attitude was often expressed when there had been a total lack of classroom visitation for the semester. Those indicating this attitude

TABLE IX

PERCENTAGE OF TEACHERS WHO WERE NOT VISITED BY SUPERVISORY OFFICERS DURING THE SEMESTER OR WHO RECEIVED NO SUGGESTIONS FROM SUPERVISORY OFFICERS FOLLOWING VISITATION

Group	Superintendent	Principal	Supervisor
I.....	77.1	92.9	87.3
II.....	83.7	89.2	79.3
III.....	90.7	76.7	90.7
IV.....	92.8	89.3	85.7
All groups..	82.0	90.2	85.1

feared that a false impression of the school might be gained because of the report. In spite of the lack of supervision, the school is a "well-oiled, smoothly running machine." "All's well that goes well, but we certainly know when it doesn't." Evidently, with most teachers the running is "the gowd for a' that."

The second most common attitude expressed by the teachers was an attitude of disrespect and antipathy for supervision. Three different teachers in three different high schools in a large city said, "We do not have supervision in this city. No one believes in it." This attitude clearly grows out of the idea held by many teachers that they know more about their own tasks than do the less-specialized officers who are supervising them. In many cases the attitude was so explained.

A third attitude, which was fairly common, was an attitude of

felt need for sympathetic, constructive help. The following quotation illustrates this attitude.

> Please do not quote me,[1] but I believe many teachers feel about supervision as I do. No one has ever found fault with my work; nor has any supervisory officer ever gone out of his way to commend it. Frankly, I, like many another teacher, have become completely discouraged. Honestly, what have we to encourage us? I quit growing years ago because I found out that it apparently made no difference. I sometimes feel that I get along just a little better when I don't try than when I do. A little help and encouragement might have gone a long way. It's too late now.

In any one of these three classes of attitudes, one finds a reflection of the lack of respect teachers have for the supervision they receive. Much of this lack of respect is probably due to the indefinite policies and procedures of supervision. Indefinite policies in turn may be traced to a lack of definite allocation of responsibility for supervision. If responsibility for supervision were definitely located, we would not expect to find in a study such as this, which includes a total of 2,123 visits to classroom teachers, that 308 of the 451 teachers, or 68.3 per cent, received not a single suggestion of a supervisory nature following the visits.

It is evident, too, that whatever technique of supervision is evolved and used must, in some way, remove the present attitudes of distrust and antipathy which teachers have toward supervision in general. The normal and legitimate effects of such attitudes are bound to decrease very materially the satisfactions which should accompany successful classroom teaching. A dissatisfied and unhappy body of teachers does not give promise of maximum returns. Good supervision should insure maximum returns by making the teaching offer possibilities of growth. Proper attitudes, outlooks, and appreciation for supervision thus become essential. At present, they appear to be almost universally lacking.

[1] The teacher later gave permission to be quoted.

[*To be concluded*]

THE INTELLIGENCE QUOTIENT AS A PROGNOSIS OF SUCCESS IN PHYSICS

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The data presented in this article were obtained during the school year 1924–25 from a study made of three classes in high-school physics in the North High School, Minneapolis. About ninety pupils were enrolled, but data are presented for only fifty-eight pupils because the records for the others are incomplete.

Mental ability was measured by means of the Miller Mental Ability Test, Form A, and the Otis Self-Administering Test of Mental Ability, Form A. The I.Q.'s obtained from the Otis test were computed according to the instructions given in the manual accompanying the test; those obtained from the Miller test were corrected so that they would more nearly approximate the Stanford-Binet I.Q.'s. Both sets of I.Q.'s, then, are in approximate agreement with the Stanford-Binet I.Q.'s.

It should be understood that the pupils were regularly classified pupils, fifty-six being in the eleventh grade and two in the twelfth grade. Forty were more than sixteen years of age. Only four were younger than fifteen. The group was a fair sample of what might be expected of an eleventh-grade class so far as maturity is concerned.

Success in physics was measured by a group of tests covering the conventional topics studied in high-school physics, namely, metric and English units, simple machines, mechanics of liquids, mechanics of gases, forces and strains, motion and acceleration, sound, heat, light, and magnetism and electricity. There are twelve comprehensive tests represented, each consisting of at least two sections, namely, subject-matter information and problems for solution. The test on heat is made up of three information tests and one problem test. The highest possible score on all the tests is 415.

Table I shows the total scores on the physics tests given during

TABLE I*

Pupil	Test Score in Physics I	Test Score in Physics II	Total	Miller I.Q.	Otis I.Q.	Mean I.Q.
1	84	149	233	104	113	109
2	74	91	165	95	105	100
3	99	163	262	114	103	109
5	70	118	188	105	108	107
6	94	153	247	115	120	118
7	67	110	177	103	111	107
8	62	96	158	111	112	112
11	67	112	179	106	109	108
12	84	126	210	102	105	104
13	78	122	200	89	101	95
14	66	118	184	99	114	107
15	57	100	157	100	105	103
17	74	94	168	91	101	96
21	86	146	232	115	105	110
22	68	99	167	92	88	90
23	80	116	196	115	118	117
24	70	158	228	95	102	99
25	74	89	163	113	108	111
26	90	142	232	122	122	122
27	89	162	251	113	117	115
32	91	162	253	111	109	110
33	60	127	187	105	109	107
34	108	196	304	123	131	127
35	74	121	195	103	115	109
36	64	134	198	105	110	108
38	103	156	259	120	125	123
39	92	171	263	123	120	122
41	55	113	168	94	91	93
44	66	123	189	106	103	105
45	79	75	154	99	96	98
46	59	97	156	104	92	98
49	102	191	293	116	122	119
53	88	107	195	119	120	120
55	51	92	143	95	100	98
56	83	144	227	103	108	106
58	70	103	173	95	97	96
60	64	120	184	103	102	103
64	124	214	338	126	134	130
65	51	92	143	99	91	95
66	85	119	204	99	98	99
70	68	101	169	112	103	108
71	68	77	145	103	100	102
72	67	118	185	103	95	99
74	73	150	223	110	104	107
75	106	174	280	119	120	120
76	52	119	171	104	107	106
77	78	119	197	106	102	104
79	126	217	343	117	121	119
80	88	144	232	111	110	111
82	93	153	246	122	111	117
83	97	155	252	115	115	115
84	116	242	358	113	122	118

*Mean score in physics, 209.8; mean I.Q., 107.7.

TABLE I—*Continued*

Pupil	Test Score in Physics I	Test Score in Physics II	Total	Miller I.Q.	Otis I.Q.	Mean I.Q.
86	70	108	178	97	95	96
87	53	94	147	106	99	103
88	100	178	278	105	107	106
89	54	89	143	100	96	98
90	73	118	191	101	99	100
91	62	144	206	114	108	111

the first semester, the total scores on the physics tests given during the second semester, the total combined scores on all the physics tests, the Miller I.Q.'s, the Otis I.Q.'s, and the mean I.Q.'s. The correlation (Pearson formula) between the test scores in Physics I and the test scores in Physics II is $.865 \pm .02$, showing that the pupils obtained test ratings in the second semester similar to those obtained in the first semester. This correlation is also evidence of the validity of the tests themselves. The similarity of the I.Q.'s obtained by means of the two mental-ability tests may be noted. There are some large variations, but in the case of a particular pupil the mean of the two may be considered a fairly close approximation to the correct I.Q. The correlation (Pearson formula) between the I.Q.'s obtained by means of the two tests is $.77 \pm .03$. Apparently, the two mental-ability tests do not agree in their measure of mental ability as well as the physics tests agree in their measure of ability in physics.

The question with which this article is particularly concerned is the extent to which success in physics, as measured by the physics tests, may be predicted from the I.Q.'s obtained through the use of the mental-ability tests. Table II gives the mean I.Q.'s in rank order, together with the scores on the physics tests. The mean score on the physics tests is 209.8. The correlation between the scores in physics and the I.Q.'s is $.76 \pm .03$ as determined by the Pearson formula and $.82 \pm .03$ as determined by the Spearman rank difference method.

The correlation between the I.Q.'s and the scores on the tests in physics is high, but a study of the table shows some variations which should be noted. Nine pupils having I.Q.'s higher than the mean (107.7) made scores on the physics tests lower than the mean

TABLE II*

Pupil	Mean I.Q.	Rank	Score on Physics Tests
64	130	1	338
34	127	2	304
38	123	3	259
39	122	4.5	263
26	122	4.5	232
53	120	6.5	195
75	120	6.5	280
49	119	8.5	293
79	119	8.5	343
6	118	10.5	247
84	118	10.5	358
23	117	12.5	196
82	117	12.5	246
27	115	14.5	251
83	115	14.5	252
8	112	16	158
25	111	18	163
80	111	18	232
91	111	18	206
21	110	20.5	232
32	110	20.5	253
1	109	23	233
3	109	23	262
35	109	23	195
11	108	26	179
36	108	26	198
70	108	26	169
5	107	30	188
7	107	30	177
14	107	30	184
33	107	30	187
74	107	30	223
76	106	34	171
88	106	34	278
56	106	34	227
44	105	36	189
12	104	37.5	210
77	104	37.5	197
15	103	40	157
60	103	40	184
87	103	40	147
71	102	42	145
2	100	43.5	165
90	100	43.5	191
24	99	46	228
66	99	46	204
72	99	46	185
45	98	49.5	154
46	98	49.5	156
55	98	49.5	143
89	98	49.5	143
17	96	53	168

*Mean score in physics, 209.8; median score in physics, 195.5. Mean I.Q., 107.7; median I.Q., 107.6.

TABLE II—*Continued*

Pupil	Mean I.Q.	Rank	Score on Physics Tests
58	96	53	173
86	96	53	178
13	95	55·5	200
65	95	55·5	143
41	93	57	168
22	90	58	167

score (209.8). In other words, 66.7 per cent of those having I.Q.'s higher than the mean I.Q. obtained scores on the physics tests higher than the mean score. On the other hand, five pupils having I.Q.'s lower than the mean I.Q. (107.7) obtained scores on the physics tests higher than the mean score (209.8). In other words, 84 per cent of those having I.Q.'s lower than the mean I.Q. obtained scores on the physics tests lower than the mean score.

The median score on the physics tests is 195.5; the median I.Q., 107.6. Only six of the pupils in the upper half of the I.Q. distribution obtained scores not in the upper half of the physics distribution. These are Pupils 53, 8, 25, 35, 11, and 70. Of these six pupils, two pupils, Nos. 53 and 35, are on the border line, each with a score of 195. Practically, then, only four pupils are seriously misplaced. Eight of the pupils in the lower half of the I.Q. distribution—Pupils 74, 88, 56, 12, 77, 24, 66, and 13—are in the upper half of the physics distribution. Seventy-eight per cent of those in the upper half of the I.Q. distribution are in the upper half of the physics distribution, and 74 per cent of those in the lower half of the I.Q. distribution are in the lower half of the physics distribution.

It is evident that there are factors which affect scores on the tests in physics other than the I.Q. but that not many errors would be made in predicting success in physics on the basis of the I.Q. Were it desired to fix a minimum I.Q., the possession of which would lead to a recommendation to enrol in physics, the minimum desirable score on the physics tests must first be determined. Apparently, satisfactory work is done by 78 per cent of the pupils having I.Q.'s of 108 or higher. How to pick out the 22 per cent who will not do good work is the problem. It is probable that, through a consideration of character-trait ratings, interest ratings, and previous school marks, this 22 per cent could be discovered.

Should those pupils having I.Q.'s lower than 108 be allowed to enrol in physics? The writer can see no harm in permitting the enrolment of anyone who is interested. It can be made clear to the pupil, however, that the chances of obtaining a satisfactory rating, represented by a score of 195.5 on these tests in physics, are only 26 out of 100; the chances of getting 209.8 on such a basis are only 16 out of 100.

This raises the question of who should fail in a course in physics. Why should anyone fail? The writer believes that each pupil should know his rating in all abilities that can be measured but that opportunities should not be denied except when permission to enrol is inimical to the best interests of all in the group. It should be possible to offer other avenues of activity to the pupil not likely to do well in physics which could be made to appeal to him as offering better chances for success.

THE NATIONAL HONOR SOCIETY

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We have honor societies, hundreds of them—local societies, district federations, and chapters of the National Honor Society. Every month the number increases; back of the movement there is an idea that has caught hold. If this idea is to retain its hold, the society must be justified by its accomplishments. In an attempt to find out how the issue is being met, a series of questions covering some of the outstanding problems was distributed. Stimulating replies were received from more than forty chapters of the National Honor Society, located in almost every section of the United States.

While there have been various types of honor society since 1900, many of them with national aspirations, the National Honor Society is rather new. It grew out of an investigation begun by the National Association of Secondary School Principals in 1919, an investigation which resulted in the constitution of the National Honor Society, adopted in 1921. Within the broad general outlines of the national organization, each chapter may frame its own constitution and work out its own membership basis. The chief restrictions are three: (1) The pupils elected must be in the upper fourth of their class in scholarship, and, from this group, not more than 15 per cent of the class may be chosen. (2) Elections may not take place earlier than the end of the junior year. (3) Final choice must be in the hands of a faculty committee, appointed by the principal. The emblem of the society is the golden torch, to be won by pupils through character, scholarship, leadership, and service, weighed according to the provisions of the chapter.

It is perhaps only natural that many of the chapters, instead of evolving new schemes of organization of their own, modeled themselves after local societies concerning which it was possible to gain some very definite information. The chapters of the National Honor Society run the whole gamut of types from the purely scholastic

society which elects the highest 15 per cent in scholarship and bestows pins at commencement to the society which puts the record of character, leadership, and service first and uses scholarship only as an elimination test. All societies, however, seem to fall into two main types according to their aims. For convenience, these may be called the honorary society and the working honor society.

The honorary society exists to reward achievement. Football, dramatics, debating, and a long list of other activities are appropriately recognized. The finer accomplishments—distinguished scholarship, character, leadership, and service—deserve equal recognition. The expectation of marked and general improvement in scholarship and interest in activities throughout the school as soon as an honorary society is founded is not usually realized. The disappointment is quite natural but hardly justified. The senior year is almost a lifetime distant in the time perspective of a Freshman, and the expectation of honor at that time is usually too remote to motivate his work unless his interests already lie in that direction. The realization of this truth does not belittle the real function of the honorary society in giving well-deserved recognition for true achievements.

The working honor society has, in theory, two functions and, in practice, a wide range of problems. From the point of view of the pupils, it should serve as a reward for achievement, but its main objective in the eyes of its sponsors is the stimulation of character, scholarship, leadership, and service both among its members and throughout the school. The difficulty is in translating such fine-sounding theory into practice. If the group is a chapter of the National Honor Society, it has practically no continuous existence; a small junior group initiated late in the spring may form a nucleus for the next year, but the organization is primarily for Seniors. If such a transitory group is to be truly useful during its brief active life, the wise choice of members is important and the skilful planning of the program imperative.

Choice is limited to those in the upper one-fourth of the class in scholarship. That much is prescribed in the national constitution. When the interpretation is left to individual chapters, even apparently rigid requirements become plastic. The averaging of percentage marks would give a uniform scale, but most schools now

use letters which lend themselves to a point system of weighting marks. For example, Table I shows the number of points assigned to each mark in two high schools. It is an interesting experiment to apply the two scales to the same group of pupils, making two lists with the pupils arranged in the order of scholarly excellence according to each system. In hardly an instance will an individual pupil occupy the same position in both cases. Both scales are valid and justifiable, however. Does high scholarship consist of exceptional work, or is it something within the reach of any pupil who can carry creditably a heavy schedule but is seldom brilliant? There is no simple and obvious answer to this question, but, assuming that the decision has been made, there still remain character, leadership, and service to be defined and evaluated.

TABLE I

NUMBER OF POINTS ASSIGNED TO EACH MARK IN THE CASE OF A SEMESTER COURSE WITH FIVE RECITATIONS A WEEK

	A (Excellent)	B (Good)	C (Fair)	D (Passing)	E (Failure)
Union High School, Mount Vernon, Washington	5	3	0	0	−2
West High School, Denver, Colorado	25	20	15	10	0

The National Honor Society has given some definitions of these qualities in the very useful little booklet published last year by the National Council. The difficulty is in measuring a human personality against a definition. The Union High School, Mount Vernon, Washington, gives points for school services and offices—two points for those listed as major and one point for those listed as minor—adds these points to the scholarship points, and awards pins to the 15 per cent of the pupils with the highest totals, unless the faculty committee has very damaging evidence against a pupil's character. The Central High School, Oklahoma City, Oklahoma, gives scholarship first consideration, strikes out the names of those disqualified by character, and uses leadership and service to decide in the case of a tie. Apparently, most schools determine those in the upper fourth, the scholarship eligibles, and, then, leaving out of considera-

tion their relative scholarship rank, rearrange them according to their merit in character, leadership, and service, as estimated by the whole faculty or by a committee. The high school in Wilmington, Delaware, for instance, circulates mimeographed sheets among the teachers, bearing the names of the pupils eligible in scholarship, with the request that the pupils be graded A, B, C, or D in the other three qualities. The final result depends on the comparative averages.

According to the national constitution, final decision rests with a faculty committee, appointed by the principal, but in some schools, notably the Cheltenham High School, Philadelphia, the faculty nominations are submitted to the active chapter for discussion before the final action of the committee. J. R. Kraybill, principal of the Cheltenham High School, writes, "Some very interesting comments are received in this way." The chapters of Arista in New York City, a well-established district society, which has been in existence since 1910, depend very largely on pupil discussion to bring out the vital points in the qualifications of a candidate. The dangers of encouraging pupils to discuss one another are obvious, but, in the hands of a skilful teacher and with proper safeguards against gossip and backbiting, pupil participation can be very valuable. Such discussion furnishes the most searching test of record and character; it focuses the attention of the pupils on the real meaning of membership in the society; it guarantees that the pupils who are chosen are those who, in the eyes of their fellows, are worthy and admired and usually the objects of unconscious imitation; and, lastly, it puts an effective end to the all-too-frequent bestowal of the golden torch on a particularly skilful cheat.

The appropriateness of each of the devices mentioned depends on the type of group to be chosen. It must be decided whether the award is primarily a scholarship honor or one for activities or for distinguished work in either scholarship or activities. The method of choosing members is, after all, chiefly routine. The best system will make some mistakes, and the poorest system will score some victories. A knowledge of the alternative methods used elsewhere may be suggestive, but, in making adjustments to local conditions, a generous allowance of common sense is indispensable.

More vital are the problems of the time of selection and of the program for the society. For the purely honorary society these problems are not especially vexing. When elections are held early in the year, there is sometimes the embarrassment of a mistaken choice, and it is difficult to find a reasonable explanation for the existence of a non-functioning group in the school. In the case of the purely honorary society the tendency is to postpone the elections until near the end of the senior year, making the winning of the golden torch the crowning achievement at the culmination of a successful high-school career. The only really serious question for the sponsors of such an organization to face is whether they are making the fullest use of the honor-society idea.

The working honor society which attempts to propagate its ideals is faced with the greater difficulties suggested in an earlier paragraph. The lack of continuity in the group, even if the elections are held at the earliest possible moment, is a serious obstacle. In a small school the numbers are too few for any pretentious undertakings. To have the membership practically confined to one class may be a hindrance to the vital connection between the society and the student body. Perhaps the most serious question of all is whether it is democratic to select a limited group of pupils, label them "Honor Society," and give to them special opportunities which should be open to all. A few sponsors feel that there is no mid-channel between the impotence of inaction and the arrogance of a "holier-than-thou" group with a special program. However, the success of Arista during fifteen years proves that there is a channel if there is a skilful hand at the helm to guide the ship through its dangers. Those who feel that in creating a functioning honor society they ordain aristocracy would do well to ponder which is more democratic—to teach young people that special gifts in brains and personality deserve reward or to impress on them that those gifts which deserve reward entail special obligations of service to the community.

Merle Prunty, principal of the Central High School, Tulsa, Oklahoma, is very emphatic in saying, "We allow no organization in our school which does not have a program of service to the institution." Obviously, there are certain kinds of leadership and service

which the honor society should not touch except as the individual members actually earn recognition in them. In that class belong all positions of glory and influence and public rank; no boy or girl should have a special claim to a class presidency or to the leading part in a play because he belongs to the honor society. In all probability, members of the honor society will be chosen for important positions with great frequency, but it should be because their companions recognize their claims as individuals. This policy is good both for them and for the group.

In casting about for some work which will fulfil the requirements here sketched, most sponsors soon feel the limitations of the one-year group. Perhaps the most interesting attempt to meet the situation is the work undertaken in Nyack, New York, where the chief fruit of last year's labor was the laying of plans for a junior society. The underclass honor group seems almost an inevitable adjunct of a successful chapter of the National Honor Society. It carries the idea and ideals down among the underclassmen until actual membership is within the time perspective even of a Freshman; it provides a group large enough for effective action even in a small school; it puts "the stimulation of success" within the reach of a very much larger percentage of the pupils; and it opens up the possibility that the honor society may be a really vital factor in the lives of all the pupils. With a junior society to do the active work, membership in the National Honor Society might well be reserved as a crowning honor to be conferred late in the senior year, an honor similar to graduation itself in recognizing the successful completion of a course of preparatory training. The list of schools which have such an arrangement thoroughly worked out is not yet long, but it seems to be growing.

The most detailed statement of the aims and theory of this plan was received from J. G. Masters, principal of the Central High School, Omaha, Nebraska, and one of the organizers of the National Honor Society. He feels very strongly that membership in the National Honor Society is an honor which ought to be deferred until the very end of the high-school career and that it should be purely honorary in "recognition of a life well lived in the high school." His school makes the honor-society assembly in a big theater of the

city one of the leading events of the school year. For the active work of the society there is an underclass organization, which serves as a training school and feeder for the National Honor Society.

The basis for membership in the junior society might well be somewhat different from the basis for membership in the senior group: character, a measurably high standard of scholarship, leadership, and service. Such qualifications are harder to measure in the younger pupils; they may be latent in a boy or girl who does nothing but study; they may be threatening to ruin the scholarship of those other capable pupils who are temporarily intoxicated by the feeling of power and popularity. Cannot the junior society be flexible enough to include the *talented* and try to bring out their undeveloped qualities? In spite of obvious shortcomings as a method of choosing the senior members, the system of points earned indiscriminately for both scholarship and activities is worth careful consideration for the underclass organization.

The specific program which will best meet the need of any individual school is bound to be a matter of adjustment to local needs. It will vary with the size of the chapter and with the capabilities of the individual pupils in a chapter in a given year. Most chapters have some social functions—banquets or parties. With some groups it might be wise to do a great deal along this line in order to build up group fellowship and pride, but, unless the chapter is to be purely honorary, there should be more than social fraternization. Out of a wide variety of suggestions from the different chapters, only a few of those which seem to fit best into the purpose of the society will be mentioned here. In some schools which have no "big-brother" and "big-sister" plan for the incoming Freshmen, the honor society undertakes the task of orienting them, advising them in their troubles, trying to keep them in school, and helping them with their work when they need it. In Wilmington, Delaware, the influence of the honor society reaches back to the graduating classes from the eighth grades in an effort to interpret the high school to them and to arouse their interest. Frequently members of the honor society act as coaches for failing pupils who really want help, for those who have been ill or who, through athletics, have lost time which they could ill afford to spare. In the

Englewood High School, Chicago, the society has been studying the problem of regulating the number of activities in which an individual may engage and the companion problem of arousing those who do not take part in any outside activities. The maintaining of a scholarship fund or a student loan fund is a valuable service sometimes undertaken, and the creation of such a fund where there is a need for it is enough to furnish an active program of some duration.

A warning is perhaps not out of place with regard to some of the activities which at once suggest themselves for the honor society. There must, of course, be an absolute standard of honor in the school work of the members of the society; there should be built up a strong sense of responsibility for the standing of the group so that a member, seeing another member cheating, will first warn him and, if he persists, will, with the knowledge of the guilty one, report him to the principal or sponsor. Great care should be taken in making members of the honor society judges of their fellows who are not members; corridor duty has its dangers in this respect; monitorial assignments in the study hall or in the classroom in the absence of the teacher may or may not be wise; asking members to report the misdeeds of non-members is certainly dangerous. Perhaps a very skilful teacher can avoid all these difficulties and build up a strong sense of responsibility on the part of the pupils. One must proceed carefully and be fully conscious of the danger of undermining the very foundations of the success of the society, namely, the respect and admiration of the rest of the school for the group as a whole and for its members as individuals.

In the last analysis, the success of an honor society depends on the enthusiasm of its sponsors, the loyal co-operation of the principal and the student leaders, and the finding of some worth-while work to do. American boys and girls are not afraid of work when it is interesting; they like it if it is not too easy. Let someone with imagination find something sufficiently important for them to do; give them a little wise guidance; and watch the results. Let faculty sponsors who are accomplishing something of value spread the news of their methods and success for the hundreds who are experimenting and who are eager for the benefit of experience without retracing the long road of trial and error.

A STUDY OF THE INTELLIGENCE AND ACHIEVEMENT OF THE JUNE, 1925, GRADUATING CLASS OF THE GROVER CLEVELAND HIGH SCHOOL, ST. LOUIS. I

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Introductory statement.—When the pupils in the June, 1925, graduating class of the Grover Cleveland High School, St. Louis, entered the school in the autumn of 1921, they were given the Terman Group Test of Mental Ability, Form A. It occurred to the writer that it would be interesting to compare the intelligence quotients derived from this test with the achievements of the pupils during their high-school careers and with the intelligence quotients derived from the Terman Group Test of Mental Ability, Form B, given in the senior year.

TABLE I

Subject	Number of Pupils Whose Records Are Included
Average achievement	259
English	260
Social science	257
Mathematics	191
Science	248
Foreign language	204
Manual arts	112
Commercial subjects	90

The study divides itself into the following important parts: the correlation between the entering I.Q.'s and achievement in high school, the distribution of marks and I.Q.'s, the correlation of element scores with achievement, the relation of the median I.Q. to the achievement median for separate high-school subjects, a comparison of boys and girls on the basis of intelligence scores and achievement, and a comparison of the results of the entering test with the results of the retest after seven semesters of high-school work.

Table I shows the numbers of pupils whose records are involved

in the different correlations. The classification of a few of the high-school subjects may be somewhat faulty, because their nature and point of view are as closely allied to those of some other group as to those of the group in which they were placed; for example, commercial geography is closely related to the social sciences; commercial arithmetic is closely related to mathematics, etc. However,

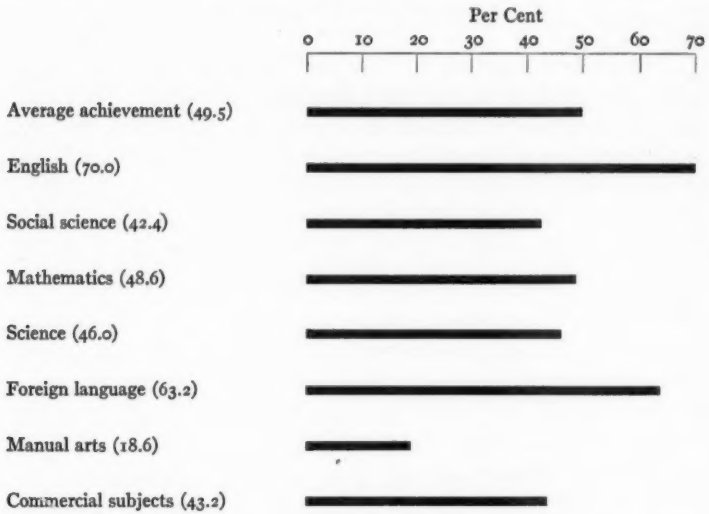

Fig. 1.—Percentage of correlation between entering I.Q.'s and high-school achievement.

the subjects were classified as nearly as possible in accord with the high-school course of study.

Relation between the entering I.Q.'s and high-school achievement.—Figure 1 shows the correlation between the entering I.Q.'s and high-school achievement. Even a casual glance at this figure should raise questions in the minds of the most ardent advocate and the most violent opponent of mental tests and should suggest fruitful methods of procedure for thoughtful administrators. It shows clearly that for this group of pupils wide variation exists as to the extent to which the entering I.Q.'s indicated probable success or failure in high-

school work. The figure shows a fairly high degree of correlation between the I.Q.'s and the average achievement. This would indicate that entering high-school pupils can be classified into somewhat homogeneous working groups by means of the Terman intelligence test.

It is evident from Figure 1 that the I.Q. indicates probable success much more reliably in some subjects than in others. English shows the highest degree of correlation. This agrees with the known fact that an English test, especially a vocabulary test, is one of the best short intelligence tests that we have. It also agrees with the fact that of those who are failures in college work, very few are successful in English.

Mathematics shows a correlation which is nearer to the correlation of average achievement than is the correlation of any other subject. Does this mean that mathematics is a truer measure of the elements that enter into high-school success than is any other single subject?

Manual arts shows a correlation of only 18.6 per cent, which is the lowest of all. Here, apparently, is one phase of work in which the Terman test would aid very little in ability classification. This question will be discussed more fully in later paragraphs.

Does the fact that English shows the highest correlation mean that English is best adapted to the intelligence of the children as a whole and best meets their intellectual needs, or does it mean that the tests depend too much on English-language ability and that therefore achievement in English will naturally be in closer agreement with the test results than will achievement in any other subject? It is interesting to note that foreign language ranks next to English. This is evidence to substantiate the claim of foreign-language teachers that knowledge of English is of great value in learning a foreign language. At least, it indicates that that which measures English-language ability also, to a large extent, measures foreign-language ability.

Inadequacy of the I.Q. alone for pupil classification.—While the results of the Terman test seem to give a fairly reliable indication of the subsequent high-school work of a pupil, especially in the so-called "academic" subjects, it is just as evident from Figure 1 and

Table II that there are many individuals whose achievements are not very closely related to their I.Q.'s. Table II shows emphatically that there is wide variation in the achievements of those whose I.Q.'s fall in the same class and that there is great variation in the I.Q.'s of those whose achievements are approximately the same. Note, for example, those who have I.Q.'s from 80.0 to 84.9, the lowest recorded. The average achievements of these pupils vary from 60 to 84, with nine of the ten pupils having achievements higher than

TABLE II

DISTRIBUTION OF 259 PUPILS ON THE BASIS OF HIGH-SCHOOL MARKS AND I.Q.'S

I.Q.	MARKS								
	55–59	60–64	65–69	70–74	75–79	80–84	85–89	90–94	Total
140.0–144.9.....	0	0	0	0	0	2	0	0	2
135.0–139.9.....	0	0	0	0	0	1	0	1	2
130.0–134.9.....	0	0	0	0	0	1	1	1	3
125.0–129.9.....	0	0	0	2	1	3	4	0	10
120.0–124.9.....	0	1	0	2	2	6	3	2	16
115.0–119.9.....	0	0	0	1	7	3	8	0	19
110.0–114.9.....	0	1	1	4	9	9	9	4	37
105.0–109.9.....	0	0	4	9	11	10	7	0	41
100.0–104.9.....	1	0	4	6	13	5	3	0	32
95.0– 99.9.....	0	3	10	6	13	5	4	0	41
90.0– 94.9.....	0	1	4	13	5	3	0	0	26
85.0– 89.9.....	0	1	8	5	3	1	2	0	20
80.0– 84.9.....	0	1	4	3	1	1	0	0	10
Total.....	1	8	35	51	65	50	41	8	259

that of one of the pupils with an I.Q. above 120; the achievement of at least one of them is above the average for the whole group. Again, those in the I.Q. class 110.0–114.9 include a number of pupils, probably at least six, below the achievement median for the whole group; they also include as many in the highest grade of achievement as do all the other classes combined. Evidently, if these pupils had been placed in the same group, they would not have been a homogeneous class so far as accomplishment is concerned. Among those whose average achievement was between 80.0 and 84.9 in the three years of high-school work, there is a range of I.Q.'s through all the classes. The fact that these pupils were grouped according to the test scores for their first two years of work in English, social science, mathemat-

ics, Latin, and Spanish probably affected the achievement distribution to some extent.

A more detailed study of the table might reveal many more facts, but these are sufficient to indicate that the most modern procedure in grouping pupils, that of combining all other available data with the data secured from an intelligence test, is not only advisable but essential in order to obtain the best results. The tendency among educators to use the group intelligence tests not only more frequently but also more cautiously seems to be well founded.

Professor Haggerty has said that it is not at all certain that a perfect measure of intelligence would give a perfect indication of success in school or in life.[1] In his study of successful men, he found that these men consider industry as the most important qualification for success. The most enthusiastic advocates of mental testing do not claim that mental tests measure all the elements which contribute to success. Tests for measuring other important elements are needed and are being devised. Notable among these are the will-temperament tests prepared by June E. Downey. As has been said, either intelligence tests are inadequate to measure intelligence or intelligence itself is inadequate to produce success. However, it is seen that none of the pupils whose records are involved in this survey has an I.Q. below 80. According to Terman's classification, they are all above borderline deficiency. This seems to indicate that those with I.Q.'s below 80 either do not enter high school or drop out before graduating.

With all the available data used wisely when pupils enter high school, it is still evident that administrators may err in classification, and it seems wise to make provision, as most schools do, for pupils to pass easily from one group to another.

Value of element scores in pupil classification.—In the administration of the schools, it is at times necessary to shift some pupils from one ability group to another. The administrator must select the individuals who can be shifted with the least likelihood of injustice. The writer computed a number of correlations between element scores on the Terman test and achievement in separate subjects to

[1] M. E. Haggerty, "Recent Developments in Measuring Human Capacities," *Journal of Educational Research*, III (April, 1921), 245.

determine whether the element scores might give any additional information of value in such cases. He confined his attention to two subjects frequently involved in such shifts, namely, foreign language and mathematics. Correlations were computed for each element and foreign language, while mathematics achievement was compared only with the scores on the arithmetic and the number-series elements. The results are shown in Table III. From a consideration of this table, it would seem that the test elements are, on the whole, not nearly so reliable for judging the probable success or failure of pupils as are the I.Q.'s. However, in the case of the arithmetic test,

TABLE III

CORRELATION OF FOREIGN-LANGUAGE AND MATHEMATICS ACHIEVEMENT WITH ELEMENT SCORES OF THE TERMAN TEST

	Correlation
Foreign language:	
Information	.247
Best answer	.125
Word meaning	.336
Logical selection	.445
Arithmetic	.288
Sentence meaning	.140
Analogies	.196
Mixed sentences	.276
Word classification	.165
Number series	.270
Mathematics:	
Arithmetic	.579
Number series	.304

there is high correlation with the mathematics achievement of the pupils. If this correlation, which is nearly .10 higher than that of the mathematics-I.Q. correlation for the group, should prove to be as high for a large number of cases, it would indicate that the arithmetic-element score could be utilized to advantage in classifying pupils for mathematics work. Moreover, the correlation between the logical-selection element and foreign-language achievement would justify placing some reliance in the logical-selection score in classifying pupils for foreign-language teaching. All the correlations are positive, but only the two mentioned seem to represent data of value for grouping.

Comparison of intelligence and achievement in the separate high-school subjects.—Figure 2 shows that the pupils taking mathematics have the highest median I.Q., 106.6, and that those pursuing manual-arts courses have the lowest, 102.1. Those taking commercial subjects are the second lowest, with a median I.Q. of 103.9. Figure 2 verifies the general opinion that the pupils in the manual-arts and commercial departments are, on the average, the weaker pupils.

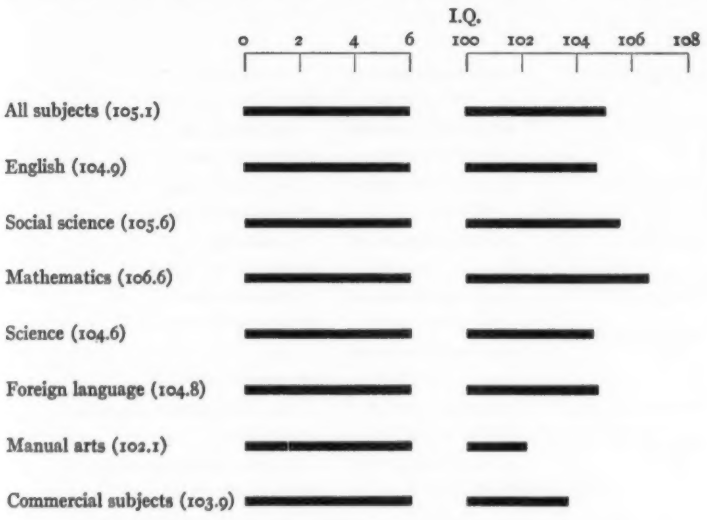

Fig. 2.—Median I.Q.'s of the pupils enrolled in the various subjects

This is not difficult to explain, since pupils who do poor work in other subjects are often advised to take these "more practical" subjects. It is probably true that, without any advice, many of the weaker pupils would take these courses. It is natural for most of those who plan to go to college to avoid these courses, since they do not meet the entrance requirements of many colleges. In other words, they are not intended to be college-preparatory courses. It is also natural to suppose that those who expect to go to college are, on the whole, better students than the average of the high-school group. This condition necessarily excludes many of the strong pupils from these de-

partments. In addition, it is reasonable to think that, on the average, those who elect manual arts or commercial subjects are not sufficiently successful or interested in intellectual pursuits to expect to continue them.

Figure 3 shows the median achievement in each subject. In spite of the fact that mathematics enrols the pupils of the highest ability,

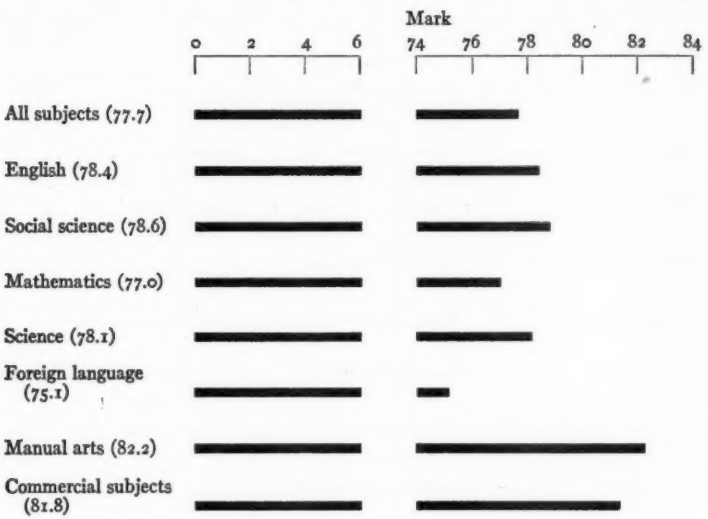

Fig. 3.—Median marks of the pupils enrolled in the various subjects

as ranked by the Terman test, the median achievement of the pupils is lower in this subject than in any other subject except foreign language. In contrast, the median achievement of those in manual arts and commercial subjects is high, though their intellectual ability is lower.

The median mark for each subject was compared with the median I.Q. for the subject, as shown in Figure 4. This figure seems to imply that a pupil of given ability has a far better chance of passing in some high-school subjects than in others.

It appears that of all the high-school subjects, foreign language and mathematics offer the least chance of success for a pupil of

given ability, while manual arts and commercial subjects offer the greatest chance of success. Does this mean that mathematics and foreign language are too difficult or that the work is not adjusted to the pupils' abilities? Does it mean that the nature of the subject matter in these courses is such that it cannot be adapted to the pupils' abilities and interests, or does it mean that the teachers of

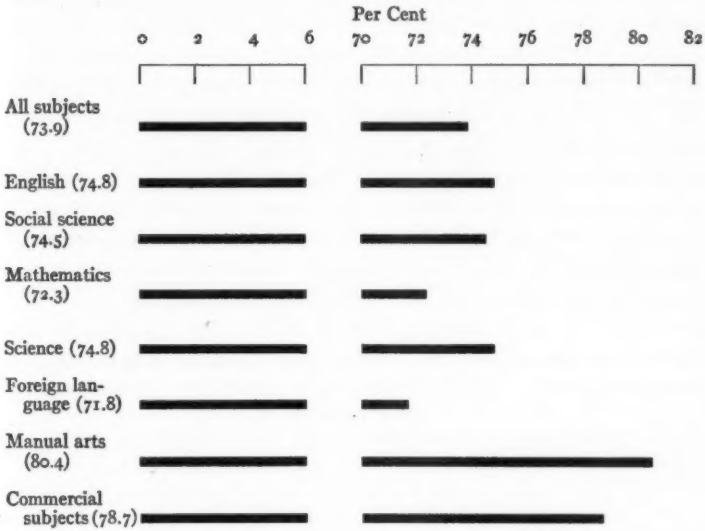

Fig. 4.—Percentage median marks are of median I.Q.'s

these subjects have not solved the teaching problems to the extent to which teachers in other departments have done so?

At the opposite end of the scale we find the chances of passing markedly higher. Are the manual arts and commercial subjects too easy? Are the subject matter and teaching better adapted to the interests and abilities of high-school pupils? Are the subjects better motivated? Do they require qualities that are not measured by an intelligence test to a greater extent than do other high-school subjects? No doubt, a number of causes contribute to these results. Some teachers of the commercial subjects and of the manual arts

deplore very much the fact that the pupils in their departments are, on the average, weaker than those in other departments. These findings, however, seem to fortify administrators and advisers in their present practice of directing weak pupils toward these courses. It appears that here is the best chance for their success. Evidently, if the high school is to be a democratic institution and accept all who come, it is essential that activities be found which are adapted to the needs of pupils of varying degrees of intellectual ability. It seems that the teachers in these departments should not resent the situation but should welcome it, knowing that they are giving work which not only appeals to the intellectually bright but is adapted to the needs of those who rank lower on the scale of abstract-thinking ability and offers opportunity for their success. No doubt, the development of the other abilities which function in these subjects is of great importance in the preparation of the individual for useful and efficient citizenship, and success in these subjects must encourage many pupils to remain in school and take other work contributory to the production of good citizens. Here, it seems, is a condition in the high school which is of importance to it as a functioning member of American society.

[*To be concluded*]

Educational Writings

REVIEWS AND BOOK NOTES

A vigorous challenge of traditional practices.—Until recent years schooling in general has remained on the level of lesson-learning. Pupils have learned and recited facts, rules, and principles, largely out of books. The assumption has been that information thus gained would carry with it in some mysterious way economical and efficient habits and skills on the one hand and motives, attitudes, and ideals on the other. The revolt against such a false assumption which John Dewey started several decades ago has gradually gained support. Those who are hopeful that the "parrot-level," "copy-minded," rigidly regimented education will continue to give way to education which shall produce "creatively intelligent," "self-purposing," honorably motivated individuals will welcome the recent contribution[1] of two school men who are both theorists and practitioners.

The thesis of the book is that the "ordinary routine, receptive methods, group mediocrity, unthinking obedience and docility often found in our schools must be supplanted by the development of the self-purposing individual . . . . self-active, responsible, socially minded, who can be trusted with power" (p. v). This philosophy emphasizes energy-releasing, socially-motivated education, not for the few highly gifted children alone but for every boy and girl who must and can learn to participate intelligently in our complex social order. Each is to be taught to think straight and to act honorably to the maximum of his capacity. School experiences are to be such that the outcomes shall be techniques of intelligent adjustment to changing situations and the skilful meeting of the emergencies and crises of life. In short, the chief business of the school is the creation of *self*, a "socially induced nature built up gradually through experience, which includes such techniques of civilization as language, customs, machinery, occupation, government, politics, religion, as well as nutrition, clothing, home life, conversation, daily contacts" (p. 347).

Obviously, the philosophy thus set forth involves a very modern conception of the curriculum. The subject matter of English, languages, mathematics, and the other subjects of instruction is only the material of the curriculum. The authors say that such subject matter is the material to think with in a creative manner. Apparently, they infer that educative value lies in the experiences

[1] Harry Lloyd Miller and Richard T. Hargreaves, *The Self-directed School*. New York: Charles Scribner's Sons, 1925. Pp. vi+412.

which the pupils have with subject matter and that a strictly logical organization of subject matter, say in geometry or grammar, may or may not be justified. The pupils' gradually enlarging experiences are the curriculum; the subject matter itself is only a part of the environment, which in case of necessity must yield to the needs of developing personalities. "We need to recognize the far-reaching significance of the child's dominant interests. If a pupil is actually incorporating the spirit of any course or subject of the curriculum and is finding in it a joyous release of powers, provision should be made for encouragement in that direction" (p. 171).

As has been indicated, the authors are practical school men. Their book is literally filled with reports of concrete classroom situations which exemplify the carrying out of the "guide lines" of activity that will direct children to self-realization. In general, they advocate the contract method. They believe in individualization of instruction in every classroom. They advocate graded assignments and differentiated projects. They champion the education of each individual up to capacity. They maintain that social diagnosis is equally as important as mental diagnosis. They believe that the signs used in rating pupils in advance of the *experiment of living* are often external and empirical. As authority for their central thesis, they quote Dewey: "It is not the business of education (elementary and secondary, at least) to produce the future leaders. The function is to make the common man more worth while to himself first, and then through himself to society" (p. 123).

The book is addressed mainly to secondary-school administrators and teachers, who will find in it help and inspiration and concrete suggestions for making instruction really function in the lives of pupils. It will have an earnest appeal for all who believe that the ethical, moral, and spiritual outcomes of schooling, too much neglected in the past, are, in the last analysis, of supreme importance.

R. L. LYMAN

Readings in science for classes in English.—Few developments in the teaching of English are more encouraging than is the tendency during recent years to broaden the scope of the material that is given a place in literature classes. Instead of confining the attention of boys and girls to imaginative works in the form of fiction, drama, and poetry, courses in English now include in increasing quantity materials from the fields of biography, travel, history, industry, and science. This tendency to enlarge the types of literature included in the English curriculum will be promoted by the recent action of the College Entrance Examination Board in stating that a well-written collection of essays on scientific subjects may be as valuable in the teaching of English literature as a modern novel or a volume of short stories. The statement by the Board seems to have been responsible at least in part for the appearance of a volume of scientific essays[1] intended for use in English classes.

[1] *Readings in Science.* Edited by John A. Lester. Boston: Houghton Mifflin Co., 1925. Pp. viii+182. $0.56.

The book is composed of eighteen essays, each of which, with one exception, has been published since 1914. The selections are grouped under the following headings: "Beginnings," four essays; "Development and Discovery," six essays; "The Universe and the World," six essays; "The Future," two essays. Among the authors included are Sir Oliver Lodge, Walter Libby, John Tyndall, H. G. Wells, George H. Parker, William Beebe, Sir Richard Gregory, Charles Nordmann, J. Arthur Thomson, Edwin E. Slosson, Benjamin Harrow, and Vernon Kellogg. The content of the essays may be judged from the following titles: "What Science Means for Man" (Lodge), "Science Four Thousand Years Ago" (Libby), "Evolution" (Parker), "The Conquest of Disease" (Gregory), "The Kingdom of the Heavens" (Nordmann), "The Great Deeps" (Thomson), "The Laboratory of Man" (Slosson), "The Romance of the Atom" (Harrow), and "The New Heredity" (Kellogg). A list of "Books Worth Reading" dealing with scientific subjects is provided.

The volume is well suited to pupils in the third or fourth year of the high school. The essays will prove a source of enrichment for courses that are overloaded with the traditional type of material. They will awaken the interest of pupils who are apathetic toward imaginative productions. The volume deserves careful examination and consideration by teachers of English and by school administrators who are eager to respond to present-day needs by introducing into their courses in English worth-while content material possessing literary merit.

HOWARD C. HILL

A new method of trade instruction.—The problem of constructing a curriculum for trade training is relatively simple as compared with such problems as that of selecting course material from the field of the practical arts which might contribute to the education of the general student. Trade instruction is well defined as to subject matter, and its objectives are clearly seen. A knowledge of what to teach, however, does not carry with it a knowledge of the most effective method of teaching. The methods that have been advanced for giving trade instruction are legion. In vocational education we have witnessed the disastrous results that have usually followed the attempts of the rounded mechanic to teach a class of inexperienced boys. In the effort to improve instruction, a series of "trade analyses" were made. These were reported in pedagogical terms and presented sequential arrangements of jobs, but they resulted in very little, if any, improvement in actual instruction.

After some years of experience with trade instruction and with a wider introduction of this phase of training into the schools, a method has been evolved which has proved of distinct merit. The general idea is so simple that one wonders why it has not been in general use from the start. A recent book[1] applies this method to the sheet-metal trade and shows in detail the organization of the content material and the teaching procedure.

[1] R. W. Selvidge and Elmer W. Christy, *Instruction Manual for Sheet-Metal Workers*. Peoria, Illinois: Manual Arts Press, 1925. Pp. 168.

The book indicates the method to be followed by the shop instructor. The authors list the thirty-eight unit operations which make up the manipulative side of the trade of the sheet-metal worker. In addition, they treat nine topics dealing with information needed by a sheet-metal worker. When the instructor assigns a job to the apprentice, the apprentice checks the specific unit operations which are necessary in order to complete the work successfully and indicates the order in which the operations should be carried on.

In connection with each unit operation, information is given with regard to the tools to be used and the steps to be followed. A number of questions to be answered by the student are listed. This material is supplemented by illustrations wherever it is apparent that words do not clearly convey the ideas of the technical processes. The student is advised to consult this body of subject matter whenever he is confronted with a new unit operation.

Were it true that a tradesman needs only training in manipulative operations or skills, the worth of this method of instruction would not be evident. The fact that it is essential for a craftsman to know when to use a process and the relation of one technical process to another in order to work effectively makes this self-directed scheme of instruction a real contribution to the pedagogy of trade instruction.

ROBERT WOELLNER

The place of memory selections in the curriculum.—A thing of beauty should be a permanent possession. Despite their immaturity and crudeness of emotions, children respond to the aesthetic appeal of literary gems. They bring to these a vivid imagination, a love for the beautiful, and a capacity for rhythmic response. Their elemental sense of justice is thoroughly satisfied by the precepts taught in the best school literature. The author of a recent volume[1] bases his study of memory selections on the child's stock of capacities and sentiments that seek to be invested in literary experiences. He utilizes what nature provides and shows teachers how to fan the flame of aesthetic craving.

Dr. Stitt's book places memory selections in the course in English, shows their vital significance, and indicates methods of teaching that preserve the spirit of the artist's product. The author gives abundant devices, but at no time does he lose himself in the mechanics of learning. At all times he shows how the child is to be led to think about the selection, to react to it, and to live with it. The final section of the book gives favorite selections and songs.

Memory Selections achieves its purpose directly and helpfully. It should find its place among the ready reference books on the teacher's desk. If its counsels are followed, the teacher will introduce her pupils very effectively to the best ideas and ideals of our literature and will give these an abiding place in the mind of youth. The things of beauty will thus truly become permanent possessions.

PAUL KLAPPER

COLLEGE OF THE CITY OF NEW YORK

[1] Edward W. Stitt, *Memory Selections: Their Value and Importance.* New York: Hinds, Hayden & Eldredge, Inc., 1925. Pp. xvi+296. $1.60.

A handbook of vocational guidance.—Considered historically, the vocational-guidance movement is relatively new. It has, however, received much attention during the last two decades and, in its widespread recognition and in the amount of literature which it has called forth, has made up much of what it lost in getting a late start. The sudden popularity of the guidance movement in its various phases may be attributed in large part to the growth of the public-school enrolment, which has brought more diversified groups of pupils into the school system, and to the change in our industrial system from the home industry and the simple factory to the immense organizations of modern industry. Arthur F. Payne offers a comprehensive discussion[1] of the whole field from many different angles.

The book begins with a brief survey of the social changes which have given rise to the vocational-guidance movement in our educational system. The complete transition from the most primitive social conditions to modern science and industry is summarized in a few pages. The author further traces the development of the idea of guidance from the philosophical recognition of differences in abilities in Plato's *Republic,* through the periods when efforts were made at character analysis by phrenology and physiognomy, to the modern movement emphasizing scientific tests of various kinds. He gives a good summary of the weaknesses of the hypotheses of phrenology and physiognomy. He also discusses the beginnings in intelligence testing made by Binet and Simon, the development of trade tests, and the establishment of various organizations of guidance in the United States and foreign countries.

One evidence of the recency of the origin and development of the guidance movement is the lack of standardized terminology. The book gives analyses of 103 different definitions of vocational guidance. From these analyses the author selects what he considers the most essential factors and formulates his own definition. A similar lack of agreement exists among the methods of guiding individuals. There are at least six different kinds of guidance which may be employed. However, the author points out that underlying all of these there are certain fundamental principles and assumptions, psychological, social, and economic.

The factors which condition the success of individual members of society, the traditional heredity and environment combination, are discussed at considerable length. Outstanding native factors conditioning success are personality traits and general capacity. Environmental factors to be given special consideration are nationality and education. In addition to these more general factors are the special characteristics of individuals at certain ages or at certain periods in their development. Particularly important are the characteristics of adolescence, such as physical changes, new interests, and emotional reactions. A successful adviser must be familiar with these facts.

The author outlines the main elements of a complete guidance program

[1] Arthur F. Payne, *Organization of Vocational Guidance.* New York: McGraw-Hill Book Co., Inc., 1925. Pp. xvi+438. $3.50.

and summarizes the most strategic points at which guidance may be given. His treatment of the first of these topics is complete and includes a comprehensive outline which should serve as a guide in the analysis, training, and placement involved in a vocational-guidance program. He follows his summary of the strategic points at which guidance may be given with a detailed presentation of the administration of guidance in various school units. In this connection are provided illustrations of various types of guidance activities which are pursued in the elementary school, junior high school, senior high school, part-time and continuation school, trade school, and other special units of the school system.

The next several chapters are devoted to a discussion of the various elements entering into a guidance program and the administrative relation of directors and advisers to other officers within the school system and to organizations in the community. The author presents several types of school organization which make provision for guidance in connection with other administrative functions.

Proceeding to the actual giving of vocational information, the author suggests a project plan to take the place of the book method of studying vocations. He outlines his proposed method of procedure in considerable detail. This is followed by a chapter discussing the more general topic of how and from what sources the adviser may secure the information which he needs. The author further outlines the use of standardized tests for classifying pupils into homogeneous groups in which instruction and guidance may be adapted to group needs. His discussion of tests is detailed and contains much practical information. In the treatment of abnormal types, he presents diagnostic symptoms with illustrative case studies of the various types. He also summarizes the physical stigmata which serve as an index to disability and characterize certain abnormal types. He concludes the book with two short chapters, one devoted to the technique of making surveys of guidance systems, the other containing an outline of some of the unsolved problems in the field of vocational guidance.

No doubt, opinions of this book will vary, depending on the angle from which it is viewed or the purpose for which it is considered. It is certainly an exhaustive treatment, almost encyclopedic. It will furnish good text material for introductory courses in vocational guidance and will serve as an excellent handbook for superintendents, principals, teachers, and vocational directors or advisers. It is written in a direct, clear, matter-of-fact style.

A. J. BRUMBAUGH

Sociology for high-school pupils.—The social-studies program for the twelfth grade continues to arouse much discussion, some of which is lacking in objectivity on the part of protagonists of different types of courses of study. There is always present the open question of the organization of a course about a series of problems, each to be treated from the social, economic, and civic points of view, as opposed to the logical and cumulative organization of subject matter

intended to develop in pupils a body of workable concepts, with the possibility of applying the concepts to specific problems of modern life as an incidental phase of instruction. The author of a recent text[1] has apparently attempted to strike a balance between the two types of organization.

The twenty-nine chapters of the book are grouped into three parts: "Trends in American Society," "Major Social Problems," and "Major Civic Problems." The first part deals with certain trends in modern life, out of which arise many of the more specific social and civic, as well as economic, problems. Included in the list one finds population, natural resources, the trek to the city, the "machine age," the broadening mental horizon, and the home. The second and third parts are intended to develop the major problems which grow out of the more fundamental changes in present-day life. As the book is intended for use in a half-year course to be followed by a course in economics, the number of problems to be considered necessarily results in an arbitrary selection by the author. Economists might object to the inclusion of the "Labor-Capital Struggle" as a "civic" problem, but the author does not confine his definition of civics within the narrow limits of the realm of political science.

The content of the volume is interpretative rather than factual, although the author does not neglect the presentation of facts. The style is fluent and readable; slang expressions, although not desirable in a textbook, are used in developing situations in their true settings. The author presents a fearless yet objective treatment of controversial questions; he avoids the conventional type of discussion based on high-sounding phrases and innocuous generalities. The chapters vary considerably in quality; the discussion of "Public Opinion" is noticeably weak. Teachers not in sympathy with the sociological ideas advanced by the author in previous books will dissent from certain interpretations of facts and situations found in the text.

The large number of graphs and charts used is commendable. The problems submitted for discussion are thought-provoking, but the reference lists are not always carefully adapted to high-school Seniors. The book list is made up, for the most part, of books on the college level. Certain omissions are noted—for example, Sutherland's excellent book on criminology. A new approach to the study of modern problems is presented in the volume. Teachers and administrators now experimenting with different types of content materials should find it suggestive and stimulating.

W. G. KIMMEL

The content and method of health education.—The modern program of health education represents a fusion of three movements—physical education, school hygiene, and medical inspection. Too frequently programs of health instruction have placed undue emphasis on propaganda or barren memorization of isolated

[1] Edward Alsworth Ross, *Civic Sociology*. Yonkers-on-Hudson, New York: World Book Co., 1925. Pp. vi+366. $1.80.

facts. A new book[1] seeks to make use of the recent research in physiology, hygiene, and sanitation and to employ the practices of modern pedagogy in setting forth the objectives, content, and method of health education.

Part I outlines the objectives and the scope of health instruction. Attention is called to the fact that it is important that the teacher follow conscientiously the health principles which she seeks to inculcate in her pupils. Part II presents the information or content which underlies the formation of correct health habits. Among the topics treated are posture, exercise, nutrition and digestion, the body as a thermal machine, alcohol and narcotics, the nervous system and the sense organs, physical defects, disease germs, community sanitation, the work of the health department, sex hygiene, and accidents and first aid. Part III includes eight chapters of valuable and usable suggestions regarding courses of study and supplementary aids in promoting a program of health education. The laws of learning in the establishment of health habits are: (1) make the child understand what is to be done; (2) give opportunity for the exercise of the desired habits; and (3) provide satisfaction or encouragement for practicing health habits. Separate courses of study are suggested for three groups of pupils—Grades I–III, Grades IV–VI, and Grades VII–IX and junior and senior high schools. The daily program of health instruction is outlined; examples of supplementary aids, such as poems, stories, dramatizations, games, and other physical activities, are given. A final chapter discusses the place of the community in a program of health education.

The appendixes include a table of food values and a selected bibliography. Each chapter is followed by a list of topics for investigation and discussion. The book should prove useful to teachers in service, to students in teacher-training courses, and to the general reader who is interested in health information and instruction. The style is clear and readable and employs a minimum of technicalities.

CARTER V. GOOD

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Readings in French civilization.—An examination of a classroom edition of Alfred Rambaud's *La Civilization française*[2] arranged by Joseph Seronde, of Yale University, reveals certain details that are new and interesting. On the one hand, the material of the text itself is out of the ordinary, and it should prove stimulating and informative reading. It is full of uncommon facts and glimpses of the past, all of which form a fascinating picture of French manners of other days. Above all, it offers the imaginative young student of French a desirable background—something tangible and human with which to associate

[1] Charles-Edward Amory Winslow and Pauline Brooks Williamson, *The Laws of Health and How to Teach Them.* New York: Charles E. Merrill Co., 1925. Pp. xiv+354. $1.60.

[2] Alfred Rambaud, *Extraits de l'Histoire de la Civilization française.* Edited by Joseph Seronde. New York: Henry Holt & Co., 1925. Pp. vi+284.

in his mind the time, let us say, of Rabelais or Molière. An examination of the average student's mental stock, however, will show that such a background, with all the richness and color that it gives to the study of a foreign language, is usually lacking. Such a text as this, simple and clear and, in addition, scholarly and authentic, provides a faint but traceable path back to the France of other days.

On the other hand, two interesting features of the text should be noted: (1) an unobtrusive questionnaire of four or five divisions placed conveniently at the bottom of each page of the text, an innovation that has already proved its merit, and (2) a vocabulary, ample and orderly, in which the definition of each word listed is given in clear and simple French. Whether the instructor employs the text in the manner recommended by Mr. Seronde in the pleasing Preface or whether he uses it in other ways of his own devising, he is bound to find these two features admirable aids in the development of fluent discussions in French and in the building of a far richer and surer vocabulary. In short, this little book presents, in a new and stimulating way, fresh and interesting material for intensive class work.

DURBIN ROWLAND

Beginning course in algebra.—A number of texts have been published which claim to embody the recommendations of the National Committee on Mathematical Requirements with regard to the reorganization of secondary-school mathematics. One of the most recent is a ninth-grade text[1] purporting to present a first course in algebra that is understandable, within the reach of young people, and of real educational value.

As one glances through the book, one cannot help but notice that each idea or process is introduced and developed at the moment when it is needed. Much formal textual material is replaced by problems which present new situations and help the pupil to think his way out. In addition, there is an abundance of oral algebra preceding many of the written exercises and problems and preparing the way for the work which follows. This plan of introducing mental work dealing with the very problems which the pupil is about to solve lightens the task of both teacher and pupil.

Other special features of the book are (1) the solution of equations by a series of logical steps without any suggestion of juggling or artificiality; (2) the special symbolism used to help the pupil think straight when he transforms equations; (3) the systematic instruction in the solution of verbal problems, with tests which enable pupil and teacher to locate the cause of any failure; (4) the careful presentation of the important factorizations at the moment when they are useful; (5) the many points of contact with arithmetic; (6) the provision for individual differences.

The inclusion of the chapters on geometry and trigonometry is but a feeble

[1] Harry C. Barber, *Everyday Algebra for the Ninth School Year*. Boston: Houghton Mifflin Co., 1925. Pp. xxii+372. $1.24.

attempt at correlation and decreases the value of the text. Some of the geometry and trigonometry included is too difficult for the average ninth-grade pupil.

The book is attractive, and the printing is good. As a text, it is rather heavy for a first course in algebra.

C. A. STONE

The socialization of history.—History is rapidly becoming a social science in fact as well as in name. One proof of this lies in the character of a recent text[1] in American history for high-school use—a text which, because of its selection and organization of materials, shows the influence of the social historian.

We are told in the Introduction that the usual chapter given to the discovery of America has been omitted, but in reality it has only been shifted to the Appendix. The book opens with a three-chapter discussion of Colonial life and government. In sharp contrast to the condensation and omissions of the first section of the book, the treatment of the Revolutionary period is more complete than usual. Yet relatively little space is given to military affairs, the authors being interested in the life, thoughts, and characteristics of the people who fought the Revolution. The period between 1789 and 1815 is represented as one in which the United States was trying to free herself from European entanglements. The days of Jackson, the period of expansion, and the struggle over slavery are treated concisely and in less detail than is usually the case.

The chief value of the book lies in the discussion of events since 1865. The period since the Civil War has long been the stumbling point for high-school pupils, and the text presents a new attempt at clarification of the events of a confessedly confusing time. Following a chapter on "The Long Way to Peace," which quickly disposes of political reconstruction, are chapters on "An Economic Revolution," "Production on a Large Scale," "Armies of Laborers," and "The Agrarian Crusade." Into these four topics are woven the events of domestic development between 1865 and 1890. Political affairs are made minor to economic affairs, and economic affairs are treated only as an approach to the life of the people of the times. A single chapter reviews the foreign affairs of the nation between 1865 and 1900 and leads into a discussion of "The Times of Theodore Roosevelt." This is a chapter dealing with American literary, educational, social, and political life in the first decade of the present century. It is followed by a discussion of the attempt to bring big business under government regulation and of the rise of progressivism down to 1914. Then comes the world-war, with an unusual amount of space devoted to the European background of the war and to the political and economic situation after 1919. The last chapter, "Problems of Today," might well be used as a vantage point from which to start the course in "Modern Problems."

Seventy maps are included in the text and more than forty full-page portraits of the men who made the story of which the book tells. The volume has

[1] Henry Eldridge Bourne and Elbert Jay Benton, *American History*. Boston: D. C. Heath & Co., 1925. Pp. x+674+xlvi.

few other pedagogical aids; a list of "Problems" is given with some of the chapters, but most of the topics are not usable. The suggested readings are intended for teachers rather than for pupils.

From the historical point of view, the book has a great deal to commend it. In the first place, "the space given to military history has been reduced in order to admit an account of the social and economic activities of the other elements of the population during war periods. . . . . The economic and social revolution since the Civil War is the backbone of the text for recent times" (p. iii). In these respects the book is written from the point of view of the modern social historian. In the second place, the book is not so purely national in character as are most texts; it treats American development as the product of external forces as well as internal forces. The Revolution is treated as "A Part of a World War for Trade and Empire"; there is a chapter on "Entangled in the Napoleonic Wars" and one on "Will the Civil War Become a World War?" In the third place, the book is written for the purpose of giving pupils a clear view of the historical background of the present. We are told in the Introduction that "a textbook that meets the needs of high schools today must emphasize the connection between current political and social problems and the past experience of the American people" (p. iii). Throughout the book there is comparison, direct and indirect, between the present and the past; and suggestions from the experience of the past which are helpful in the solution of today's problems are offered.

HOWARD E. WILSON

An elementary course in statistical and graphical methods.—School reports and surveys and many professional books in education have made extensive use of statistical and graphical devices. The teacher is often confused by the terminology used and the methods employed. A standard text in statistics usually presents a treatment too formidable for mastery by the average teacher and principal or even by the student in education. The author of a well-known standard text in statistics has prepared a primer[1] which purports to present the essential elements of the statistical treatment of data and of the graphic representation of facts.

The book contains eight chapters. It is pointed out that the abilities of children vary widely and arrange themselves in a normal distribution with a definite central tendency. Directions are given for making a frequency table, plotting a frequency diagram, and graphing a frequency distribution. The values and uses of the central tendencies—mode, median, and mean—are discussed. Certain measures of variability—quartile deviation, probable error, mean deviation, and standard deviation—are described and illustrated. Directions are given for smoothing an irregular distribution. Teachers' marks are shown to be variable and inconsistent, and the normal curve is suggested for distributing school marks according to the relative ability of the pupils. Several

[1] Harold Rugg, *A Primer of Graphics and Statistics for Teachers.* Boston: Houghton Mifflin Co., 1925. Pp. vi+142. $1.60.

methods of computing correlation are explained in simple language. Numerous illustrations are given to show how teachers of mathematics, science, and the social studies use graphic and pictorial devices in order to present their subjects more effectively. The final chapter includes seventeen suggestions which the Joint Committee on Standards for Graphic Presentation considers representative of the more generally applicable principles of elementary graphic presentation.

The appendixes include a selected bibliography of statistical methods and an annotated bibliography of recent developments in the use of statistical methods in education. The author makes extensive use of tabular, graphic, and pictorial devices to illustrate the topics under discussion. The book contains twenty-three tables and 115 figures but does not include a list of either. Teachers and principals in service and students in education courses who have neither the time nor the need to make a detailed study of statistical methods will find the book a very satisfactory treatment of the problem. The style of writing is rather intimate; the diction is clear and forceful.

MIAMI UNIVERSITY CARTER V. GOOD

CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY, AND PRACTICE

BAGLEY, WILLIAM C. *Determinism in Education.* Baltimore: Warwick & York, Inc., 1925. Pp. 194. $2.20.

BRANOM, MENDEL E. *The Measurement of Achievement in Geography.* New York: Macmillan Co., 1925. Pp. xii+188.

BURT, CYRIL. *The Young Delinquent.* New York: D. Appleton & Co., 1925. Pp. xvi+620. $5.00.

CLEMENT, JOHN ADDISON. *Principles and Practices of Secondary Education.* New York: Century Co., 1925. Pp. xxii+504. $2.50.

KLAPPER, PAUL. *Teaching Children to Read.* New York: D. Appleton & Co., 1926 [revised]. Pp. xxii+304.

MORTON, G. F. *Childhood's Fears.* New York: Macmillan Co., 1925. Pp. 284.

PARKER, SAMUEL CHESTER, and TEMPLE, ALICE. *Unified Kindergarten and First-Grade Teaching.* Boston: Ginn & Co., 1925. Pp. xii+600.

ROANTREE, WILLIAM F., and TAYLOR, MARY S. *An Arithmetic for Teachers.* New York: Macmillan Co., 1925. Pp. xiv+622.

ROHRBACH, QUINCY ALVIN W. *Non-athletic Student Activities in the Secondary School.* Philadelphia: Westbrook Publishing Co., 1925. Pp. 234.

SWIFT, FLETCHER HARPER, and GOLDTHORPE, JOHN HAROLD. *Studies in Public School Finance: The South—Arkansas, Oklahoma, Alabama, Tennessee.* Research Publications of the University of Minnesota, Education Series, No. 4. Minneapolis, Minnesota: University of Minnesota, 1925. Pp. xiv+224. $2.50.

SWIFT, FLETCHER HARPER, DEL PLAINE, FRANCES KELLEY, and TROXEL, OLIVER LEONARD. *Studies in Public School Finance: The Middle West—Illinois, Minnesota, South Dakota—with a Supplement on Alaska.* Research Publications of the University of Minnesota, Education Series, No. 3. Minneapolis, Minnesota: University of Minnesota, 1925. Pp. x+330. $3.50.

WINCH, W. H. *Teaching Beginners to Read in England: Its Methods, Results, and Psychological Bases.* Journal of Educational Research Monographs, Number 8. Bloomington, Illinois: Public School Publishing Co., 1925. Pp. 186.

WOODBURY, CHARLES HERBERT, and PERKINS, ELIZABETH WARD. *The Art of Seeing.* New York: Charles Scribner's Sons, 1925. Pp. xii+290.

BOOKS PRIMARILY FOR HIGH-SCHOOL TEACHERS AND PUPILS

ASHLEY, ROSCOE LEWIS. *The New Civics.* New York: Macmillan Co., 1925 [revised]. Pp. xx+530.

BOND, OTTO F. *Review Essentials of French Grammar and Composition.* New York: Macmillan Co., 1925. Pp. xiv+196.

BUTLER, SAMUEL. *The Way of All Flesh.* New York: Macmillan Co., 1925. Pp. xviii+446.

CONOVER, MILTON. *Working Manual of Civics.* Baltimore: Johns Hopkins Press, 1925. Pp. viii+88. $0.75.

DICKENS, CHARLES. *The Personal History and Experience of David Copperfield the Younger.* Abridged by Edith Freelove Smith. New York: Macmillan Co., 1925. Pp. xvi+512.

DODD, E. E. *Fiber and Finish: Studies for the Developing of Personality.* Boston: Ginn & Co., 1925. Pp. viii+196. $0.80.

DUMAS, ALEXANDRE. *The Three Musketeers.* Edited and abridged by Marquis E. Shattuck. New York: Macmillan Co., 1925. Pp. xii+466.

The High School Curriculum and Syllabi of High School Subjects. Bulletin No. 3-C. St. Paul, Minnesota: State Department of Education, 1925. Pp. 92.

LEEMAN, JEAN. *Toute la France.* New York: Charles E. Merrill Co., 1925. Pp. x+202.

PETERSON, JOHN OSWELL. *Plainer Penmanship for High Schools and Junior High Schools.* Milwaukee, Wisconsin: Bruce Publishing Co., 1925. Pp. 144. $1.60.

PHILIPPE, CHARLES-LOUIS. *Enfants et petites gens.* Edited by Hélène Harvitt and William C. Doub-Kerr. New York: Oxford University Press, American Branch, 1925. Pp. xiv+244. $1.10.

SMITH, EDITH LILLIAN. *Everyday Science Projects.* Boston: Houghton Mifflin Co., 1925. Pp. viii+342. $0.96.

STORMZAND, MARTIN JAMES. *American History Teaching and Testing.* New York: Macmillan Co., 1925. Pp. x+182.

Voltaire Selections. With an Introduction and Notes by Aurélien Digeon and

Édouard Fannière. New York: Oxford University Press, American Branch, 1925. Pp. 164. $1.25.

WERREMEYER, D. W. *Cumulative Mathematics:* Seventh Grade, pp. x+234; Eighth Grade, pp. xii+222. New York: Harcourt, Brace & Co., 1925.

PUBLICATIONS OF THE UNITED STATES BUREAU OF EDUCATION AND OTHER MATERIAL IN PAMPHLET FORM

BOURNE, W. R. *A Method of Evaluating Secondary School Units.* George Peabody College for Teachers Contributions to Education, Number Sixteen. Nashville, Tennessee: George Peabody College for Teachers, 1925. Pp. 144.

DONOVAN, HERMAN LEE. *A State's Elementary Teacher-training Problem (Kentucky).* George Peabody College for Teachers Contributions to Education, Number Seventeen. Nashville, Tennessee: George Peabody College for Teachers, 1925. Pp. 94.

Ninth Annual Report to Congress of the Federal Board for Vocational Education. Washington: Federal Board for Vocational Education, 1925. Pp. xiv+180.

Recent issues of the Bureau of Education:

Bulletin No. 27, 1925—*Some Recent Movements in City School Systems.*

Bulletin No. 31, 1925—*Medical Education, 1922–1924.*

School Health Studies No. 10—*Progress and Prospect in School Health Work.*

Report of the President and of the Treasurer of the Carnegie Corporation of New York for the Year Ended September 30, 1925. New York: Carnegie Corporation of New York, 1925. Pp. vi+76.

SEYBOLT, ROBERT FRANCIS. *Source Studies in American Colonial Education: The Private School.* Bureau of Educational Research Bulletin No. 28. University of Illinois Bulletin, Vol. XXIII, No. 4. Urbana, Illinois: University of Illinois, 1925. Pp. 110. $0.50.

The Subject Index to Periodicals, 1922. Section F, Education and Child Welfare. London, England: Library Association, 1925. Pp. 58.

MISCELLANEOUS PUBLICATIONS

CRAWFORD, CAROLINE, and FOGG, ELIZABETH ROSE. *Choice Rhythms for Youthful Dancers.* New York: A. S. Barnes & Co., 1925. Pp. 104. $3.00.

PIERCE, FREDERICK. *Understanding Our Children.* New York: E. P. Dutton & Co., 1926. Pp. x+198. $2.00.

TAI, TSE-CHIEN. *Professional Education for Librarianship.* New York: H. W. Wilson Co., 1925. Pp. x+260. $2.25.

WILLIAMS, WHITING. *Mainsprings of Men.* New York: Charles Scribner's Sons, 1925. Pp. vi+314.